

Sequence Listing

<110> LG Life Sciences Ltd.

<120> Gene Families Associated With Cancers

<130> LL03PCT006

<150> US60/419911

<151> 2002-10-18

<150> US60/419912

<151> 2002-10-18

<150> US60/420088

<151> 2002-10-18

<150> US60/434243

<151> 2002-12-16

<150> US60/434278

<151> 2002-12-16

<150> US60/438278

<151> 2003-01-03

<160> 56

<170> KopatentIn 1.71

<210> 1

<211> 5293

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (390)..(4880)

<223> LBFL109 Clone A

<400> 1

Sequence Listing

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aggcctgcct gaaggaggag cttccttccc cggtggagct ggaggagagc cttcggaatg      180
gagtgtctgt ggccaagctg ggccactgtt ttgcaccctc cgtggttccg ttgaagaaga      240
tctacgatgt ggagcagctg cggtaccagg caactggctt acatttccgt cacacagaca      300
acatcaactt ttggctatct gcaatagccc acatcggtct gccttcgacc ttcttcccag      360
agaccacgga catctatgac aaaaagaac  atg ccc cgg gta gtc tac tgc atc      413
                               Met Pro Arg Val Val Tyr Cys Ile
                               1             5
cat gct ctc agt ctc ttc ctc ttc cgg ctg gga ttg gcc cct cag ata      461
His Ala Leu Ser Leu Phe Leu Phe Arg Leu Gly Leu Ala Pro Gln Ile
    10             15             20
cat gat cta tac ggg aaa gtg aaa ttc aca gct gag gaa ctc agc aac      509
His Asp Leu Tyr Gly Lys Val Lys Phe Thr Ala Glu Glu Leu Ser Asn
    25             30             35             40
atg gcg tcc gaa ctg gcc aaa tat ggc ctc cag ctg cct gcc ttc agc      557
Met Ala Ser Glu Leu Ala Lys Tyr Gly Leu Gln Leu Pro Ala Phe Ser
           45             50             55
aag atc ggg ggc atc ttg gcc aat gag ctc tcg gtg gat gag gct gca      605
Lys Ile Gly Gly Ile Leu Ala Asn Glu Leu Ser Val Asp Glu Ala Ala
           60             65             70
gtc cat gca gct gtt ctt gcc atc aat gaa gca gtg gag cga ggg gtg      653
Val His Ala Ala Val Leu Ala Ile Asn Glu Ala Val Glu Arg Gly Val
           75             80             85
gtg gag gac acc ctg gct gcc ttg cag aat ccc agt gct ctt ctg gag      701
Val Glu Asp Thr Leu Ala Ala Leu Gln Asn Pro Ser Ala Leu Leu Glu
           90             95            100

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Sequence Listing

<p>aat ctc cga gag cct ctg gca gcc gtc tac cag gag atg ctg gcc cag Asn Leu Arg Glu Pro Leu Ala Ala Val Tyr Gln Glu Met Leu Ala Gln 105 110 115 120</p>	749
<p>gcc aag atg gag aag gca gcc aat gcc agg aac cat gat gac aga gaa Ala Lys Met Glu Lys Ala Ala Asn Ala Arg Asn His Asp Asp Arg Glu 125 130 135</p>	797
<p>agc cag gac atc tat gac cac tac cta act cag gct gaa atc cag ggc Ser Gln Asp Ile Tyr Asp His Tyr Leu Thr Gln Ala Glu Ile Gln Gly 140 145 150</p>	845
<p>aat atc aac cat gtc aac gtc cat ggg gct cta gaa gtt gtt gat gat Asn Ile Asn His Val Asn Val His Gly Ala Leu Glu Val Val Asp Asp 155 160 165</p>	893
<p>gcc ctg gaa aga cag agc cct gaa gcc ttg ctc aag gcc ctt caa gac Ala Leu Glu Arg Gln Ser Pro Glu Ala Leu Leu Lys Ala Leu Gln Asp 170 175 180</p>	941
<p>cct gcc ctg gcc ctg cga ggg gtg agg aga gac ttt gct gac tgg tac Pro Ala Leu Ala Leu Arg Gly Val Arg Arg Asp Phe Ala Asp Trp Tyr 185 190 195 200</p>	989
<p>ctg gag cag ctg aac tca gac aga gag cag aag gca cag gag ctg ggc Leu Glu Gln Leu Asn Ser Asp Arg Glu Gln Lys Ala Gln Glu Leu Gly 205 210 215</p>	1037
<p>ctg gtg gag ctt ctg gaa aag gag gaa gtc cag gct ggt gtg gct gca Leu Val Glu Leu Leu Glu Lys Glu Glu Val Gln Ala Gly Val Ala Ala 220 225 230</p>	1085
<p>gcc aac aca aag ggt gat cag gaa caa gcc atg ctc cac gct gtg cag Ala Asn Thr Lys Gly Asp Gln Glu Gln Ala Met Leu His Ala Val Gln 235 240 245</p>	1133
<p>cgg atc aac aaa gcc atc cgg agg gga gtg gcg gct gac act gtg aag Arg Ile Asn Lys Ala Ile Arg Arg Gly Val Ala Ala Asp Thr Val Lys 250 255 260</p>	1181

act ctg tct gcc cta ctg ctt cct gca gct ggc cta gat gat gtc agc 1661
Thr Leu Ser Ala Leu Leu Leu Pro Ala Ala Gly Leu Asp Asp Val Ser
410 415 420

Sequence Listing

ctc cct gtc gcc cct cgg tac cat ctc ctc ctt gtg gca gcc aaa agg	1709
Leu Pro Val Ala Pro Arg Tyr His Leu Leu Leu Val Ala Ala Lys Arg	
425 430 435 440	
 cag aag gcc cag gtg aca ggg gat cct gga gct gtg ctg tgg ctt gag	 1757
Gln Lys Ala Gln Val Thr Gly Asp Pro Gly Ala Val Leu Trp Leu Glu	
445 450 455	
 gag atc cgc cag gga gtg gtc aga gcc aac cag gac act aat aca gct	 1805
Glu Ile Arg Gln Gly Val Val Arg Ala Asn Gln Asp Thr Asn Thr Ala	
460 465 470	
 cag aga atg gct ctt ggt gtg gct gcc atc aat caa gcc atc aag gag	 1853
Gln Arg Met Ala Leu Gly Val Ala Ala Ile Asn Gln Ala Ile Lys Glu	
475 480 485	
 ggc aag gca gcc cag act gag cgg gtg ttg agg aac ccc gca gtg gcc	 1901
Gly Lys Ala Ala Gln Thr Glu Arg Val Leu Arg Asn Pro Ala Val Ala	
490 495 500	
 ctt cga ggg gta gtt ccc gac tgt gcc aac ggc tac cag cga gcc ctg	 1949
Leu Arg Gly Val Val Pro Asp Cys Ala Asn Gly Tyr Gln Arg Ala Leu	
505 510 515 520	
 gaa agt gcc atg gca aag aaa cag cgt cca gca gac aca gct ttc tgg	 1997
Glu Ser Ala Met Ala Lys Lys Gln Arg Pro Ala Asp Thr Ala Phe Trp	
525 530 535	
 gtt caa cat gac atg aag gat ggc act gcc tac tac ttc cat ctg cag	 2045
Val Gln His Asp Met Lys Asp Gly Thr Ala Tyr Tyr Phe His Leu Gln	
540 545 550	
 acc ttc cag ggg atc tgg gag caa cct cct ggc tgc ccc ctc aac acc	 2093
Thr Phe Gln Gly Ile Trp Glu Gln Pro Pro Gly Cys Pro Leu Asn Thr	
555 560 565	
 tct cac ctg acc cgg gag gag atc cag tca gct gtc acc aag gtc act	 2141
Ser His Leu Thr Arg Glu Glu Ile Gln Ser Ala Val Thr Lys Val Thr	
570 575 580	

Sequence Listing

gct gcc tat gac cgc caa cag ctc tgg aaa gcc aac gtc ggc ttt gtt	2189
Ala Ala Tyr Asp Arg Gln Gln Leu Trp Lys Ala Asn Val Gly Phe Val	
585 590 595 600	
atc cag ctc cag gcc cgc ctc cgt ggc ttc cta gtt cgg cag aag ttt	2237
Ile Gln Leu Gln Ala Arg Leu Arg Gly Phe Leu Val Arg Gln Lys Phe	
605 610 615	
gct gag cat tcc cac ttt ctg agg acc tgg ctc cca gca gtc atc aag	2285
Ala Glu His Ser His Phe Leu Arg Thr Trp Leu Pro Ala Val Ile Lys	
620 625 630	
atc cag gct cat tgg cgg ggt tat agg cag cgg aag att tac ctg gag	2333
Ile Gln Ala His Trp Arg Gly Tyr Arg Gln Arg Lys Ile Tyr Leu Glu	
635 640 645	
tgg ttg cag tat ttt aaa gca aac ctg gat gcc ata atc aag atc cag	2381
Trp Leu Gln Tyr Phe Lys Ala Asn Leu Asp Ala Ile Ile Lys Ile Gln	
650 655 660	
gcc tgg gcc cgg atg tgg gca gct cgg agg caa tac ctg agg cgt ctg	2429
Ala Trp Ala Arg Met Trp Ala Ala Arg Arg Gln Tyr Leu Arg Arg Leu	
665 670 675 680	
cac tac ttc cag aag aat gtt aac tcc att gtg aag atc cag gca ttt	2477
His Tyr Phe Gln Lys Asn Val Asn Ser Ile Val Lys Ile Gln Ala Phe	
685 690 695	
ttc cga gcc agg aaa gcc caa gat gac tac agg ata tta gtg cat gca	2525
Phe Arg Ala Arg Lys Ala Gln Asp Asp Tyr Arg Ile Leu Val His Ala	
700 705 710	
ccc cac cct cct ctc agt gtg gta cgc aga ttt gcc cat ctc ttg aat	2573
Pro His Pro Pro Leu Ser Val Val Arg Arg Phe Ala His Leu Leu Asn	
715 720 725	
caa agc cag caa gac ttc ttg gct gag gca gag ctg ctg aag ctc cag	2621
Gln Ser Gln Gln Asp Phe Leu Ala Glu Ala Glu Leu Leu Lys Leu Gln	
730 735 740	

Sequence Listing

gaa gag gta gtt agg aag atc cga tcc aat cag cag ctg gag cag gac	2669
Glu Glu Val Val Arg Lys Ile Arg Ser Asn Gln Gln Leu Glu Gln Asp	
745 750 755 760	
ctc aac atc atg gac atc aag att ggc ctg ctg gtg aag aac cgg atc	2717
Leu Asn Ile Met Asp Ile Lys Ile Gly Leu Leu Val Lys Asn Arg Ile	
765 770 775	
act ctg cag gaa gtg gtc tcc cac tgc aag aag ctg acc aag agg aat	2765
Thr Leu Gln Glu Val Val Ser His Cys Lys Lys Leu Thr Lys Arg Asn	
780 785 790	
aag gaa cag ctg tca gat atg atg gtt ctg gac aag cag aag ggt tta	2813
Lys Glu Gln Leu Ser Asp Met Met Val Leu Asp Lys Gln Lys Gly Leu	
795 800 805	
aag tcg ctg agc aaa gag aaa cgg cag aaa cta gaa gca tac caa cac	2861
Lys Ser Leu Ser Lys Glu Lys Arg Gln Lys Leu Glu Ala Tyr Gln His	
810 815 820	
ctc ttc tac ctg ctc cag act cag ccc atc tac ctg gcc aag ctg atc	2909
Leu Phe Tyr Leu Leu Gln Thr Gln Pro Ile Tyr Leu Ala Lys Leu Ile	
825 830 835 840	
ttt cag atg cca cag aac aaa acc acc aag ttc atg gag gca gtg att	2957
Phe Gln Met Pro Gln Asn Lys Thr Thr Lys Phe Met Glu Ala Val Ile	
845 850 855	
ttc agc ctg tac aac tat gcc tcc agc cgc cga gag gcc tat ctc ctg	3005
Phe Ser Leu Tyr Asn Tyr Ala Ser Ser Arg Arg Glu Ala Tyr Leu Leu	
860 865 870	
ctc cag ctg ttc aag aca gca ctc cag gag gaa atc aag tca aag gtg	3053
Leu Gln Leu Phe Lys Thr Ala Leu Gln Glu Glu Ile Lys Ser Lys Val	
875 880 885	
gag cag ccc cag gac gtg gtg aca ggc aac cca aca gtg gtg agg ctg	3101
Glu Gln Pro Gln Asp Val Val Thr Gly Asn Pro Thr Val Val Arg Leu	
890 895 900	

Sequence Listing

gtg gtg aga ttc tac cgt aat ggg cgg gga cag agt gcc ctg cag gag	3149
Val Val Arg Phe Tyr Arg Asn Gly Arg Gly Gln Ser Ala Leu Gln Glu	
905 910 915 920	
att ctg ggc aag gtt atc cag gat gtg cta gaa gac aaa gtg ctc agc	3197
Ile Leu Gly Lys Val Ile Gln Asp Val Leu Glu Asp Lys Val Leu Ser	
925 930 935	
gtc cac aca gac cct gtc cac ctc tat aag aac tgg atc aac cag act	3245
Val His Thr Asp Pro Val His Leu Tyr Lys Asn Trp Ile Asn Gln Thr	
940 945 950	
gag gcc cag aca ggg cag cgc agc cat ctc cca tat gat gtc acc ccg	3293
Glu Ala Gln Thr Gly Gln Arg Ser His Leu Pro Tyr Asp Val Thr Pro	
955 960 965	
gag cag gcc ttg agc cac ccc gag gtc cag aga cga ctg gac atc gcc	3341
Glu Gln Ala Leu Ser His Pro Glu Val Gln Arg Arg Leu Asp Ile Ala	
970 975 980	
cta cgc aac ctc ctc gcc atg act gat aag ttc ctt tta gcc atc acc	3389
Leu Arg Asn Leu Leu Ala Met Thr Asp Lys Phe Leu Leu Ala Ile Thr	
985 990 995 1000	
tca tct gtg gac caa att ccg tat ggg atg cga tat gtg gcc aaa gtc	3437
Ser Ser Val Asp Gln Ile Pro Tyr Gly Met Arg Tyr Val Ala Lys Val	
1005 1010 1015	
ctg aag gca act ctg gca gag aaa ttc cct gac gcc aca gac agc gag	3485
Leu Lys Ala Thr Leu Ala Glu Lys Phe Pro Asp Ala Thr Asp Ser Glu	
1020 1025 1030	
gtc tat aag gtg gtc ggg aac ctc ctg tac tac cgc ttc ctg aac cca	3533
Val Tyr Lys Val Val Gly Asn Leu Leu Tyr Tyr Arg Phe Leu Asn Pro	
1035 1040 1045	
gct gtg gtg gct cct gac gcc ttc gac att gtg gcc atg gca gct ggt	3581
Ala Val Val Ala Pro Asp Ala Phe Asp Ile Val Ala Met Ala Ala Gly	
1050 1055 1060	

Sequence Listing

gga gcc ctg gct gcc ccc cag cgc cat gcc ctg ggg gct gtg gct cag Gly Ala Leu Ala Ala Pro Gln Arg His Ala Leu Gly Ala Val Ala Gln 1065 1070 1075 1080	3629
ctc cta cag cac gct gcg gct ggc aag gcc ttc tct ggg cag agc cag Leu Leu Gln His Ala Ala Ala Gly Lys Ala Phe Ser Gly Gln Ser Gln 1085 1090 1095	3677
cac cta cgg gtc ctg aat gac tat ctg gag gaa aca cac ctc aag ttc His Leu Arg Val Leu Asn Asp Tyr Leu Glu Glu Thr His Leu Lys Phe 1100 1105 1110	3725
agg aag ttc atc cat aga gcc tgc cag gtg cca gag cca gag gag cgt Arg Lys Phe Ile His Arg Ala Cys Gln Val Pro Glu Pro Glu Glu Arg 1115 1120 1125	3773
ttt gca gtg gac gag tac tca gac atg gtg gct gtg gcc aaa ccc atg Phe Ala Val Asp Glu Tyr Ser Asp Met Val Ala Val Ala Lys Pro Met 1130 1135 1140	3821
gtg tac atc acc gtg ggg gag ctg gtc aac acg cac agg ctg ttg ctg Val Tyr Ile Thr Val Gly Glu Leu Val Asn Thr His Arg Leu Leu Leu 1145 1150 1155 1160	3869
gag cac cag gac tgc att gcc cct gat cac caa gac ccc ctg cat gag Glu His Gln Asp Cys Ile Ala Pro Asp His Gln Asp Pro Leu His Glu 1165 1170 1175	3917
ctc ctg gag gat ctt ggg gag ctg ccc acc atc cct gac ctt att ggt Leu Leu Glu Asp Leu Gly Glu Leu Pro Thr Ile Pro Asp Leu Ile Gly 1180 1185 1190	3965
gag agc atc gct gca gat ggg cac aca gac ctg agc aag cta gaa gtg Glu Ser Ile Ala Ala Asp Gly His Thr Asp Leu Ser Lys Leu Glu Val 1195 1200 1205	4013
tcc ctg acg ctg acc aac aag ttt gaa gga cta gag gca gat gct gat Ser Leu Thr Leu Thr Asn Lys Phe Glu Gly Leu Glu Ala Asp Ala Asp 1210 1215 1220	4061

Sequence Listing

gac tcc aac acc cgt agc ctg ctt ctg agc acc aag cag ctg ttg gcc	4109
Asp Ser Asn Thr Arg Ser Leu Leu Leu Ser Thr Lys Gln Leu Leu Ala	
1225 1230 1235 1240	
gat atc ata cag ttc cat cct ggg gac acc ctc aag gag atc ctg tcc	4157
Asp Ile Ile Gln Phe His Pro Gly Asp Thr Leu Lys Glu Ile Leu Ser	
1245 1250 1255	
ctc tcg gct tcc aga gag caa gaa gca gcc cac aag cag ctg atg agc	4205
Leu Ser Ala Ser Arg Glu Gln Glu Ala Ala His Lys Gln Leu Met Ser	
1260 1265 1270	
cga cgc cag gcc tgt aca gcc cag aca ccg gag cca ctg cga cga cac	4253
Arg Arg Gln Ala Cys Thr Ala Gln Thr Pro Glu Pro Leu Arg Arg His	
1275 1280 1285	
cgc tca ctg aca gct cac tcc ctc ctg cca ctg gca gag aag cag cgg	4301
Arg Ser Leu Thr Ala His Ser Leu Leu Pro Leu Ala Glu Lys Gln Arg	
1290 1295 1300	
cgc gtc ctg cgg aac ctg cgc cga ctt gaa gcc ctg ggg ttg gtc agc	4349
Arg Val Leu Arg Asn Leu Arg Arg Leu Glu Ala Leu Gly Leu Val Ser	
1305 1310 1315 1320	
gcc aga aat ggc tac cag ggg cta gtg gac gag ctg gcc aag gac atc	4397
Ala Arg Asn Gly Tyr Gln Gly Leu Val Asp Glu Leu Ala Lys Asp Ile	
1325 1330 1335	
cgc aac cag cac aga cac agg cac agg cgg aag gca gag ctg gtg aag	4445
Arg Asn Gln His Arg His Arg His Arg Arg Lys Ala Glu Leu Val Lys	
1340 1345 1350	
ctg cag gcc aca tta cag ggc ctg agc act aag acc acc ttc tat gag	4493
Leu Gln Ala Thr Leu Gln Gly Leu Ser Thr Lys Thr Thr Phe Tyr Glu	
1355 1360 1365	
gag cag ggt gac tac tac agc cag tac atc cgg gcc tgc ctg gac cac	4541
Glu Gln Gly Asp Tyr Tyr Ser Gln Tyr Ile Arg Ala Cys Leu Asp His	
1370 1375 1380	

Sequence Listing

ctg gcc ccc gac tcc aag agt tct ggg aag ggg aag aag cag cct tct Leu Ala Pro Asp Ser Lys Ser Ser Gly Lys Gly Lys Lys Gln Pro Ser 1385 1390 1395 1400	4589
ctt cat tac act gct gct cag ctc ctg gaa aag ggt gtc ttg gtg gaa Leu His Tyr Thr Ala Ala Gln Leu Leu Glu Lys Gly Val Leu Val Glu 1405 1410 1415	4637
att gaa gat ctt ccc gcc tct cac ttc aga aac gtc atc ttt gac atc Ile Glu Asp Leu Pro Ala Ser His Phe Arg Asn Val Ile Phe Asp Ile 1420 1425 1430	4685
acg ccg gga gat gag gca gga aag ttt gaa gta aat gcc aag ttc ctg Thr Pro Gly Asp Glu Ala Gly Lys Phe Glu Val Asn Ala Lys Phe Leu 1435 1440 1445	4733
ggg gtg gac atg gag cga ttt cag ctt cac tat cag gat ctc ctg cag Gly Val Asp Met Glu Arg Phe Gln Leu His Tyr Gln Asp Leu Leu Gln 1450 1455 1460	4781
ctc cag tat gag ggt gtg gct gtc atg aaa ctc ttc aac aag gcc aaa Leu Gln Tyr Glu Gly Val Ala Val Met Lys Leu Phe Asn Lys Ala Lys 1465 1470 1475 1480	4829
gtc aat gtc aac ctt ctc atc ttc ctc ctc aac aag aag ttt ttg cgg Val Asn Val Asn Leu Leu Ile Phe Leu Leu Asn Lys Lys Phe Leu Arg 1485 1490 1495	4877
aag tgacagaggc aaagggtgct acccaagccc ctcttacctc tctggatgct Lys	4930
ttctttaaca ctaactcacc actgtgcttc cctgcagaca cccagagctc aggactgggc	4990
aaggcccagg gattctcacc ccttccccag ctgggaggag cttgcctgcc tggccacaga	5050
cagtgtatct tctaattggc taaagtgggc cttgcccaga gtccagctgt gtggctttta	5110
tcatgcatga caaaccctg gctttcctgc cagatggatt ctcacccctt acagctgact	5170
cttcaggca atttccatag atctgcagtc ctgcctctgc cacagtctct ctgttgccc	5230

Sequence Listing

cacatctacc caacttctctg tactgttgcc cttctgatgt taataaaaagc agctgttact 5290

ccc 5293

<210> 2

<211> 1497

<212> PRT

<213> Homo sapiens

<400> 2

Met Pro Arg Val Val Tyr Cys Ile His Ala Leu Ser Leu Phe Leu Phe
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Arg Leu Gly Leu Ala Pro Gln Ile His Asp Leu Tyr Gly Lys Val Lys
20 25 30

Phe Thr Ala Glu Glu Leu Ser Asn Met Ala Ser Glu Leu Ala Lys Tyr
35 40 45

Gly Leu Gln Leu Pro Ala Phe Ser Lys Ile Gly Gly Ile Leu Ala Asn
50 55 60

Glu Leu Ser Val Asp Glu Ala Ala Val His Ala Ala Val Leu Ala Ile
65 70 75 80

Asn Glu Ala Val Glu Arg Gly Val Val Glu Asp Thr Leu Ala Ala Leu
85 90 95

Gln Asn Pro Ser Ala Leu Leu Glu Asn Leu Arg Glu Pro Leu Ala Ala
100 105 110

Val Tyr Gln Glu Met Leu Ala Gln Ala Lys Met Glu Lys Ala Ala Asn
115 120 125

Ala Arg Asn His Asp Asp Arg Glu Ser Gln Asp Ile Tyr Asp His Tyr
130 135 140

Leu Thr Gln Ala Glu Ile Gln Gly Asn Ile Asn His Val Asn Val His

Sequence Listing

145	150	155	160
Gly Ala Leu Glu Val Val Asp Asp Ala Leu Glu Arg Gln Ser Pro Glu			
165	170	175	
Ala Leu Leu Lys Ala Leu Gln Asp Pro Ala Leu Ala Leu Arg Gly Val			
180	185	190	
Arg Arg Asp Phe Ala Asp Trp Tyr Leu Glu Gln Leu Asn Ser Asp Arg			
195	200	205	
Glu Gln Lys Ala Gln Glu Leu Gly Leu Val Glu Leu Leu Glu Lys Glu			
210	215	220	
Glu Val Gln Ala Gly Val Ala Ala Ala Asn Thr Lys Gly Asp Gln Glu			
225	230	235	240
Gln Ala Met Leu His Ala Val Gln Arg Ile Asn Lys Ala Ile Arg Arg			
245	250	255	
Gly Val Ala Ala Asp Thr Val Lys Glu Leu Met Cys Pro Glu Ala Gln			
260	265	270	
Leu Pro Pro Val Tyr Pro Val Ala Ser Ser Met Tyr Gln Leu Glu Leu			
275	280	285	
Ala Val Leu Gln Gln Gln Gln Gly Glu Leu Gly Gln Glu Glu Leu Phe			
290	295	300	
Val Ala Val Glu Met Leu Ser Ala Val Val Leu Ile Asn Arg Ala Leu			
305	310	315	320
Glu Ala Arg Asp Ala Ser Gly Phe Trp Ser Ser Leu Val Asn Pro Ala			
325	330	335	
Thr Gly Leu Ala Glu Val Glu Gly Glu Asn Ala Gln Arg Tyr Phe Asp			
340	345	350	
Ala Leu Leu Lys Leu Arg Gln Glu Arg Gly Met Gly Glu Asp Phe Leu			
355	360	365	

Sequence Listing

Ser Trp Asn Asp Leu Gln Ala Thr Val Ser Gln Val Asn Ala Gln Thr
 370 375 380

Gln Glu Glu Thr Asp Arg Val Leu Ala Val Ser Leu Ile Asn Glu Ala
 385 390 395 400

Leu Asp Lys Gly Ser Pro Glu Lys Thr Leu Ser Ala Leu Leu Leu Pro
 405 410 415

Ala Ala Gly Leu Asp Asp Val Ser Leu Pro Val Ala Pro Arg Tyr His
 420 425 430

Leu Leu Leu Val Ala Ala Lys Arg Gln Lys Ala Gln Val Thr Gly Asp
 435 440 445

Pro Gly Ala Val Leu Trp Leu Glu Glu Ile Arg Gln Gly Val Val Arg
 450 455 460

Ala Asn Gln Asp Thr Asn Thr Ala Gln Arg Met Ala Leu Gly Val Ala
 465 470 475 480

Ala Ile Asn Gln Ala Ile Lys Glu Gly Lys Ala Ala Gln Thr Glu Arg
 485 490 495

Val Leu Arg Asn Pro Ala Val Ala Leu Arg Gly Val Val Pro Asp Cys
 500 505 510

Ala Asn Gly Tyr Gln Arg Ala Leu Glu Ser Ala Met Ala Lys Lys Gln
 515 520 525

Arg Pro Ala Asp Thr Ala Phe Trp Val Gln His Asp Met Lys Asp Gly
 530 535 540

Thr Ala Tyr Tyr Phe His Leu Gln Thr Phe Gln Gly Ile Trp Glu Gln
 545 550 555 560

Pro Pro Gly Cys Pro Leu Asn Thr Ser His Leu Thr Arg Glu Glu Ile
 565 570 575

Sequence Listing

Gln Ser Ala Val Thr Lys Val Thr Ala Ala Tyr Asp Arg Gln Gln Leu
 580 585 590

Trp Lys Ala Asn Val Gly Phe Val Ile Gln Leu Gln Ala Arg Leu Arg
 595 600 605

Gly Phe Leu Val Arg Gln Lys Phe Ala Glu His Ser His Phe Leu Arg
 610 615 620

Thr Trp Leu Pro Ala Val Ile Lys Ile Gln Ala His Trp Arg Gly Tyr
 625 630 635 640

Arg Gln Arg Lys Ile Tyr Leu Glu Trp Leu Gln Tyr Phe Lys Ala Asn
 645 650 655

Leu Asp Ala Ile Ile Lys Ile Gln Ala Trp Ala Arg Met Trp Ala Ala
 660 665 670

Arg Arg Gln Tyr Leu Arg Arg Leu His Tyr Phe Gln Lys Asn Val Asn
 675 680 685

Ser Ile Val Lys Ile Gln Ala Phe Phe Arg Ala Arg Lys Ala Gln Asp
 690 695 700

Asp Tyr Arg Ile Leu Val His Ala Pro His Pro Pro Leu Ser Val Val
 705 710 715 720

Arg Arg Phe Ala His Leu Leu Asn Gln Ser Gln Gln Asp Phe Leu Ala
 725 730 735

Glu Ala Glu Leu Leu Lys Leu Gln Glu Glu Val Val Arg Lys Ile Arg
 740 745 750

Ser Asn Gln Gln Leu Glu Gln Asp Leu Asn Ile Met Asp Ile Lys Ile
 755 760 765

Gly Leu Leu Val Lys Asn Arg Ile Thr Leu Gln Glu Val Val Ser His
 770 775 780

Cys Lys Lys Leu Thr Lys Arg Asn Lys Glu Gln Leu Ser Asp Met Met

Sequence Listing

785	790	795	800
Val Leu Asp Lys Gln Lys Gly Leu Lys Ser Leu Ser Lys Glu Lys Arg			
805	810	815	
Gln Lys Leu Glu Ala Tyr Gln His Leu Phe Tyr Leu Leu Gln Thr Gln			
820	825	830	
Pro Ile Tyr Leu Ala Lys Leu Ile Phe Gln Met Pro Gln Asn Lys Thr			
835	840	845	
Thr Lys Phe Met Glu Ala Val Ile Phe Ser Leu Tyr Asn Tyr Ala Ser			
850	855	860	
Ser Arg Arg Glu Ala Tyr Leu Leu Leu Gln Leu Phe Lys Thr Ala Leu			
865	870	875	880
Gln Glu Glu Ile Lys Ser Lys Val Glu Gln Pro Gln Asp Val Val Thr			
885	890	895	
Gly Asn Pro Thr Val Val Arg Leu Val Val Arg Phe Tyr Arg Asn Gly			
900	905	910	
Arg Gly Gln Ser Ala Leu Gln Glu Ile Leu Gly Lys Val Ile Gln Asp			
915	920	925	
Val Leu Glu Asp Lys Val Leu Ser Val His Thr Asp Pro Val His Leu			
930	935	940	
Tyr Lys Asn Trp Ile Asn Gln Thr Glu Ala Gln Thr Gly Gln Arg Ser			
945	950	955	960
His Leu Pro Tyr Asp Val Thr Pro Glu Gln Ala Leu Ser His Pro Glu			
965	970	975	
Val Gln Arg Arg Leu Asp Ile Ala Leu Arg Asn Leu Leu Ala Met Thr			
980	985	990	
Asp Lys Phe Leu Leu Ala Ile Thr Ser Ser Val Asp Gln Ile Pro Tyr			
995	1000	1005	

Sequence Listing

Gly Met Arg Tyr Val Ala Lys Val Leu Lys Ala Thr Leu Ala Glu Lys
 1010 1015 1020

Phe Pro Asp Ala Thr Asp Ser Glu Val Tyr Lys Val Val Gly Asn Leu
 1025 1030 1035 1040

Leu Tyr Tyr Arg Phe Leu Asn Pro Ala Val Val Ala Pro Asp Ala Phe
 1045 1050 1055

Asp Ile Val Ala Met Ala Ala Gly Gly Ala Leu Ala Ala Pro Gln Arg
 1060 1065 1070

His Ala Leu Gly Ala Val Ala Gln Leu Leu Gln His Ala Ala Ala Gly
 1075 1080 1085

Lys Ala Phe Ser Gly Gln Ser Gln His Leu Arg Val Leu Asn Asp Tyr
 1090 1095 1100

Leu Glu Glu Thr His Leu Lys Phe Arg Lys Phe Ile His Arg Ala Cys
 1105 1110 1115 1120

Gln Val Pro Glu Pro Glu Glu Arg Phe Ala Val Asp Glu Tyr Ser Asp
 1125 1130 1135

Met Val Ala Val Ala Lys Pro Met Val Tyr Ile Thr Val Gly Glu Leu
 1140 1145 1150

Val Asn Thr His Arg Leu Leu Leu Glu His Gln Asp Cys Ile Ala Pro
 1155 1160 1165

Asp His Gln Asp Pro Leu His Glu Leu Leu Glu Asp Leu Gly Glu Leu
 1170 1175 1180

Pro Thr Ile Pro Asp Leu Ile Gly Glu Ser Ile Ala Ala Asp Gly His
 1185 1190 1195 1200

Thr Asp Leu Ser Lys Leu Glu Val Ser Leu Thr Leu Thr Asn Lys Phe
 1205 1210 1215

Sequence Listing

Glu Gly Leu Glu Ala Asp Ala Asp Asp Ser Asn Thr Arg Ser Leu Leu
 1220 1225 1230

Leu Ser Thr Lys Gln Leu Leu Ala Asp Ile Ile Gln Phe His Pro Gly
 1235 1240 1245

Asp Thr Leu Lys Glu Ile Leu Ser Leu Ser Ala Ser Arg Glu Gln Glu
 1250 1255 1260

Ala Ala His Lys Gln Leu Met Ser Arg Arg Gln Ala Cys Thr Ala Gln
 1265 1270 1275 1280

Thr Pro Glu Pro Leu Arg Arg His Arg Ser Leu Thr Ala His Ser Leu
 1285 1290 1295

Leu Pro Leu Ala Glu Lys Gln Arg Arg Val Leu Arg Asn Leu Arg Arg
 1300 1305 1310

Leu Glu Ala Leu Gly Leu Val Ser Ala Arg Asn Gly Tyr Gln Gly Leu
 1315 1320 1325

Val Asp Glu Leu Ala Lys Asp Ile Arg Asn Gln His Arg His Arg His
 1330 1335 1340

Arg Arg Lys Ala Glu Leu Val Lys Leu Gln Ala Thr Leu Gln Gly Leu
 1345 1350 1355 1360

Ser Thr Lys Thr Thr Phe Tyr Glu Glu Gln Gly Asp Tyr Tyr Ser Gln
 1365 1370 1375

Tyr Ile Arg Ala Cys Leu Asp His Leu Ala Pro Asp Ser Lys Ser Ser
 1380 1385 1390

Gly Lys Gly Lys Lys Gln Pro Ser Leu His Tyr Thr Ala Ala Gln Leu
 1395 1400 1405

Leu Glu Lys Gly Val Leu Val Glu Ile Glu Asp Leu Pro Ala Ser His
 1410 1415 1420

Phe Arg Asn Val Ile Phe Asp Ile Thr Pro Gly Asp Glu Ala Gly Lys

Sequence Listing

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1425          1430          1435          1440
Phe Glu Val Asn Ala Lys Phe Leu Gly Val Asp Met Glu Arg Phe Gln
          1445          1450          1455
Leu His Tyr Gln Asp Leu Leu Gln Leu Gln Tyr Glu Gly Val Ala Val
          1460          1465          1470
Met Lys Leu Phe Asn Lys Ala Lys Val Asn Val Asn Leu Leu Ile Phe
          1475          1480          1485
Leu Leu Asn Lys Lys Phe Leu Arg Lys
          1490          1495

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<222>      (12)..(4904)
<223>      LBFL109 Clone B

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gaaggaggaa c          atg gag agg aga gca gcg ggc cca ggc tgg gca          44
                        Met Glu Arg Arg Ala Ala Gly Pro Gly Trp Ala
                        1          5          10

gcc tat gaa cgc ctc aca gct gag gag atg gat gag cag agg cgg cag          92
Ala Tyr Glu Arg Leu Thr Ala Glu Glu Met Asp Glu Gln Arg Arg Gln
          15          20          25

aat gtt gcc tat cag tac ctg tgc cgg ctg gag gag gcc aag cgc tgg          140
Asn Val Ala Tyr Gln Tyr Leu Cys Arg Leu Glu Glu Ala Lys Arg Trp
          30          35          40

atg gag gcc tgc ctg aag gag gag ctt cct tcc ccg gtg gag ctg gag          188

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Sequence Listing

Glu Ala Ala Val His Ala Ala Val Leu Ala Ile Asn Glu Ala Val Glu	
205	210
	215
cga ggg gtg gtg gag gac acc ctg gct gcc ttg cag aat ccc agt gct	716
Arg Gly Val Val Glu Asp Thr Leu Ala Ala Leu Gln Asn Pro Ser Ala	
220	225
	230
	235
ctt ctg gag aat ctc cga gag cct ctg gca gcc gtc tac cag gag atg	764
Leu Leu Glu Asn Leu Arg Glu Pro Leu Ala Ala Val Tyr Gln Glu Met	
240	245
	250
ctg gcc cag gcc aag atg gag aag gca gcc aat gcc agg aac cat gat	812
Leu Ala Gln Ala Lys Met Glu Lys Ala Ala Asn Ala Arg Asn His Asp	
255	260
	265
gac aga gaa agc cag gac atc tat gac cac tac cta act cag gct gaa	860
Asp Arg Glu Ser Gln Asp Ile Tyr Asp His Tyr Leu Thr Gln Ala Glu	
270	275
	280
atc cag ggc aat atc aac cat gtc aac gtc cat ggg gct cta gaa gtt	908
Ile Gln Gly Asn Ile Asn His Val Asn Val His Gly Ala Leu Glu Val	
285	290
	295
gtt gat gat gcc ctg gaa aga cag agc cct gaa gcc ttg ctc aag gcc	956
Val Asp Asp Ala Leu Glu Arg Gln Ser Pro Glu Ala Leu Leu Lys Ala	
300	305
	310
	315
ctt caa gac cct gcc ctg gcc ctg cga ggg gtg agg aga gac ttt gct	1004
Leu Gln Asp Pro Ala Leu Ala Leu Arg Gly Val Arg Arg Asp Phe Ala	
320	325
	330
gac tgg tac ctg gag cag ctg aac tca gac aga gag cag aag gca cag	1052
Asp Trp Tyr Leu Glu Gln Leu Asn Ser Asp Arg Glu Gln Lys Ala Gln	
335	340
	345
gag ctg ggc ctg gtg gag ctt ctg gaa aag gag gaa gtc cag gct ggt	1100
Glu Leu Gly Leu Val Glu Leu Leu Glu Lys Glu Glu Val Gln Ala Gly	
350	355
	360
gtg gct gca gcc aac aca aag ggt gat cag gaa caa gcc atg ctc cac	1148

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Sequence Listing

Arg	Val	Leu	Ala	Val	Ser	Leu	Ile	Asn	Glu	Ala	Leu	Asp	Lys	Gly	Ser		
525							530					535					
cct	gag	aag	act	ctg	tct	gcc	cta	ctg	ctt	cct	gca	gct	ggc	cta	gat	1676	
Pro	Glu	Lys	Thr	Leu	Ser	Ala	Leu	Leu	Leu	Pro	Ala	Ala	Gly	Leu	Asp		
540					545					550					555		
gat	gtc	agc	ctc	cct	gtc	gcc	cct	cgg	tac	cat	ctc	ctc	ctt	gtg	gca	1724	
Asp	Val	Ser	Leu	Pro	Val	Ala	Pro	Arg	Tyr	His	Leu	Leu	Leu	Val	Ala		
				560					565					570			
gcc	aaa	agg	cag	aag	gcc	cag	gtg	aca	ggg	gat	cct	gga	gct	gtg	ctg	1772	
Ala	Lys	Arg	Gln	Lys	Ala	Gln	Val	Thr	Gly	Asp	Pro	Gly	Ala	Val	Leu		
			575					580						585			
tgg	ctt	gag	gag	atc	cgc	cag	gga	gtg	gtc	aga	gcc	aac	cag	gac	act	1820	
Trp	Leu	Glu	Glu	Ile	Arg	Gln	Gly	Val	Val	Arg	Ala	Asn	Gln	Asp	Thr		
	590						595					600					
aat	aca	gct	cag	aga	atg	gct	ctt	ggt	gtg	gct	gcc	atc	aat	caa	gcc	1868	
Asn	Thr	Ala	Gln	Arg	Met	Ala	Leu	Gly	Val	Ala	Ala	Ile	Asn	Gln	Ala		
605						610					615						
atc	aag	gag	ggc	aag	gca	gcc	cag	act	gag	cgg	gtg	ttg	agg	aac	ccc	1916	
Ile	Lys	Glu	Gly	Lys	Ala	Ala	Gln	Thr	Glu	Arg	Val	Leu	Arg	Asn	Pro		
620				625						630					635		
gca	gtg	gcc	ctt	cga	ggg	gta	gtt	ccc	gac	tgt	gcc	aac	ggc	tac	cag	1964	
Ala	Val	Ala	Leu	Arg	Gly	Val	Val	Pro	Asp	Cys	Ala	Asn	Gly	Tyr	Gln		
				640					645					650			
cga	gcc	ctg	gaa	agt	gcc	atg	gca	aag	aaa	cag	cgt	cca	gca	gac	aca	2012	
Arg	Ala	Leu	Glu	Ser	Ala	Met	Ala	Lys	Lys	Gln	Arg	Pro	Ala	Asp	Thr		
			655					660						665			
gct	ttc	tgg	gtt	caa	cat	gac	atg	aag	gat	ggc	act	gcc	tac	tac	ttc	2060	
Ala	Phe	Trp	Val	Gln	His	Asp	Met	Lys	Asp	Gly	Thr	Ala	Tyr	Tyr	Phe		
	670						675					680					
cat	ctg	cag	acc	ttc	cag	ggg	atc	tgg	gag	caa	cct	cct	ggc	tgc	ccc	2108	

Sequence Listing

His Leu Gln Thr Phe Gln Gly Ile Trp Glu Gln Pro Pro Gly Cys Pro	
685	690 695
ctc aac acc tct cac ctg acc cgg gag gag atc cag tca gct gtc acc	2156
Leu Asn Thr Ser His Leu Thr Arg Glu Glu Ile Gln Ser Ala Val Thr	
700	705 710 715
aag gtc act gct gcc tat gac cgc caa cag ctc tgg aaa gcc aac gtc	2204
Lys Val Thr Ala Ala Tyr Asp Arg Gln Gln Leu Trp Lys Ala Asn Val	
	720 725 730
ggc ttt gtt atc cag ctc cag gcc cgc ctc cgt ggc ttc cta gtt cgg	2252
Gly Phe Val Ile Gln Leu Gln Ala Arg Leu Arg Gly Phe Leu Val Arg	
	735 740 745
cag aag ttt gct gag cat tcc cac ttt ctg agg acc tgg ctc cca gca	2300
Gln Lys Phe Ala Glu His Ser His Phe Leu Arg Thr Trp Leu Pro Ala	
	750 755 760
gtc atc aag atc cag gct cat tgg cgg ggt tat agg cag cgg aag att	2348
Val Ile Lys Ile Gln Ala His Trp Arg Gly Tyr Arg Gln Arg Lys Ile	
	765 770 775
tac ctg gag tgg ttg cag tat ttt aaa gca aac ctg gat gcc ata atc	2396
Tyr Leu Glu Trp Leu Gln Tyr Phe Lys Ala Asn Leu Asp Ala Ile Ile	
	780 785 790 795
aag atc cag gcc tgg gcc cgg atg tgg gca gct cgg agg caa tac ctg	2444
Lys Ile Gln Ala Trp Ala Arg Met Trp Ala Ala Arg Arg Gln Tyr Leu	
	800 805 810
agg cgt ctg cac tac ttc cag aag aat gtt aac tcc att gtg aag atc	2492
Arg Arg Leu His Tyr Phe Gln Lys Asn Val Asn Ser Ile Val Lys Ile	
	815 820 825
cag gca ttt ttc cga gcc agg aaa gcc caa gat gac tac agg ata tta	2540
Gln Ala Phe Phe Arg Ala Arg Lys Ala Gln Asp Asp Tyr Arg Ile Leu	
	830 835 840
gtg cat gca ccc cac cct cct ctc agt gtg gta cgc aga ttt gcc cat	2588

Sequence Listing

Val His Ala Pro His Pro Pro Leu Ser Val Val Arg Arg Phe Ala His	
845	850 855
ctc ttg aat caa agc cag caa gac ttc ttg gct gag gca gag ctg ctg	2636
Leu Leu Asn Gln Ser Gln Gln Asp Phe Leu Ala Glu Ala Glu Leu Leu	
860	865 870 875
aag ctc cag gaa gag gta gtt agg aag atc cga tcc aat cag cag ctg	2684
Lys Leu Gln Glu Glu Val Val Arg Lys Ile Arg Ser Asn Gln Gln Leu	
	880 885 890
gag cag gac ctc aac atc atg gac atc aag att ggc ctg ctg gtg aag	2732
Glu Gln Asp Leu Asn Ile Met Asp Ile Lys Ile Gly Leu Leu Val Lys	
	895 900 905
aac cgg atc act ctg cag gaa gtg gtc tcc cac tgc aag aag ctg acc	2780
Asn Arg Ile Thr Leu Gln Glu Val Val Ser His Cys Lys Lys Leu Thr	
	910 915 920
aag agg aat aag gaa cag ctg tca gat atg atg gtt ctg gac aag cag	2828
Lys Arg Asn Lys Glu Gln Leu Ser Asp Met Met Val Leu Asp Lys Gln	
	925 930 935
aag ggt tta aag tcg ctg agc aaa gag aaa cgg cag aaa cta gaa gca	2876
Lys Gly Leu Lys Ser Leu Ser Lys Glu Lys Arg Gln Lys Leu Glu Ala	
940	945 950 955
tac caa cac ctc ttc tac ctg ctc cag act cag ccc atc tac ctg gcc	2924
Tyr Gln His Leu Phe Tyr Leu Leu Gln Thr Gln Pro Ile Tyr Leu Ala	
	960 965 970
aag ctg atc ttt cag atg cca cag aac aaa acc acc aag ttc atg gag	2972
Lys Leu Ile Phe Gln Met Pro Gln Asn Lys Thr Thr Lys Phe Met Glu	
	975 980 985
gca gtg att ttc agc ctg tac aac tat gcc tcc agc cgc cga gag gcc	3020
Ala Val Ile Phe Ser Leu Tyr Asn Tyr Ala Ser Ser Arg Arg Glu Ala	
	990 995 1000
tat ctc ctg ctc cag ctg ttc aag aca gca ctc cag gag gaa atc aag	3068

Sequence Listing

Tyr Leu Leu Leu Gln Leu Phe Lys Thr Ala Leu Gln Glu Glu Ile Lys	
1005	1010 1015
tca aag gtg gag cag ccc cag gac gtg gtg aca ggc aac cca aca gtg	3116
Ser Lys Val Glu Gln Pro Gln Asp Val Val Thr Gly Asn Pro Thr Val	
1020	1025 1030 1035
gtg agg ctg gtg gtg aga ttc tac cgt aat ggg cgg gga cag agt gcc	3164
Val Arg Leu Val Val Arg Phe Tyr Arg Asn Gly Arg Gly Gln Ser Ala	
1040	1045 1050
ctg cag gag att ctg ggc aag gtt atc cag gat gtg cta gaa gac aaa	3212
Leu Gln Glu Ile Leu Gly Lys Val Ile Gln Asp Val Leu Glu Asp Lys	
1055	1060 1065
gtg ctc agc gtc cac aca gac cct gtc cac ctc tat aag aac tgg atc	3260
Val Leu Ser Val His Thr Asp Pro Val His Leu Tyr Lys Asn Trp Ile	
1070	1075 1080
aac cag act gag gcc cag aca ggg cag cgc agc cat ctc cca tat gat	3308
Asn Gln Thr Glu Ala Gln Thr Gly Gln Arg Ser His Leu Pro Tyr Asp	
1085	1090 1095
gtc acc ccg gag cag gcc ttg agc cac ccc gag gtc cag aga cga ctg	3356
Val Thr Pro Glu Gln Ala Leu Ser His Pro Glu Val Gln Arg Arg Leu	
1100	1105 1110 1115
gac atc gcc cta cgc aac ctc ctc gcc atg act gat aag ttc ctt tta	3404
Asp Ile Ala Leu Arg Asn Leu Leu Ala Met Thr Asp Lys Phe Leu Leu	
1120	1125 1130
gcc atc acc tca tct gtg gac caa att ccg tat ggg atg cga tat gtg	3452
Ala Ile Thr Ser Ser Val Asp Gln Ile Pro Tyr Gly Met Arg Tyr Val	
1135	1140 1145
gcc aaa gtc ctg aag gca act ctg gca gag aaa ttc cct gac gcc aca	3500
Ala Lys Val Leu Lys Ala Thr Leu Ala Glu Lys Phe Pro Asp Ala Thr	
1150	1155 1160
gac agc gag gtc tat aag gtg gtc ggg aac ctc ctg tac tac cgc ttc	3548

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Sequence Listing

Leu Ile Gly Glu Ser Ile Ala Ala Asp Gly His Thr Asp Leu Ser Lys	
1325	1330 1335
cta gaa gtg tcc ctg acg ctg acc aac aag ttt gaa gga cta gag gca	4076
Leu Glu Val Ser Leu Thr Leu Thr Asn Lys Phe Glu Gly Leu Glu Ala	
1340	1345 1350 1355
gat gct gat gac tcc aac acc cgt agc ctg ctt ctg agc acc aag cag	4124
Asp Ala Asp Asp Ser Asn Thr Arg Ser Leu Leu Leu Ser Thr Lys Gln	
	1360 1365 1370
ctg ttg gcc gat atc ata cag ttc cat cct ggg gac acc ctc aag gag	4172
Leu Leu Ala Asp Ile Ile Gln Phe His Pro Gly Asp Thr Leu Lys Glu	
	1375 1380 1385
atc ctg tcc ctc tcg gct tcc aga gag caa gaa gca gcc cac aag cag	4220
Ile Leu Ser Leu Ser Ala Ser Arg Glu Gln Glu Ala Ala His Lys Gln	
	1390 1395 1400
ctg atg agc cga cgc cag gcc tgt aca gcc cag aca ccg gag cca ctg	4268
Leu Met Ser Arg Arg Gln Ala Cys Thr Ala Gln Thr Pro Glu Pro Leu	
	1405 1410 1415
cga cga cac cgc tca ctg aca gct cac tcc ctc ctg cca ctg gca gag	4316
Arg Arg His Arg Ser Leu Thr Ala His Ser Leu Leu Pro Leu Ala Glu	
	1420 1425 1430 1435
aag cag cgg cgc gtc ctg cgg aac ctg cgc cga ctt gaa gcc ctg ggg	4364
Lys Gln Arg Arg Val Leu Arg Asn Leu Arg Arg Leu Glu Ala Leu Gly	
	1440 1445 1450
ttg gtc agc gcc aga aat ggc tac cag ggg cta gtg gac gag ctg gcc	4412
Leu Val Ser Ala Arg Asn Gly Tyr Gln Gly Leu Val Asp Glu Leu Ala	
	1455 1460 1465
aag gac atc cgc aac cag cac aga cac agg cac agg cgg aag gca gag	4460
Lys Asp Ile Arg Asn Gln His Arg His Arg His Arg Arg Lys Ala Glu	
	1470 1475 1480
ctg gtg aag ctg cag gcc aca tta cag ggc ctg agc act aag acc acc	4508

Sequence Listing

Leu Val Lys Leu Gln Ala Thr Leu Gln Gly Leu Ser Thr Lys Thr Thr	
1485	1490 1495
ttc tat gag gag cag ggt gac tac tac agc cag tac atc cgg gcc tgc	4556
Phe Tyr Glu Glu Gln Gly Asp Tyr Tyr Ser Gln Tyr Ile Arg Ala Cys	
1500	1505 1510 1515
ctg gac cac ctg gcc ccc gac tcc aag agt tct ggg aag ggg aag aag	4604
Leu Asp His Leu Ala Pro Asp Ser Lys Ser Ser Gly Lys Gly Lys Lys	
1520	1525 1530
cag cct tct ctt cat tac act gct gct cag ctc ctg gaa aag ggt gtc	4652
Gln Pro Ser Leu His Tyr Thr Ala Ala Gln Leu Leu Glu Lys Gly Val	
1535	1540 1545
ttg gtg gaa att gaa gat ctt ccc gcc tct cac ttc aga aac gtc atc	4700
Leu Val Glu Ile Glu Asp Leu Pro Ala Ser His Phe Arg Asn Val Ile	
1550	1555 1560
ttt gac atc acg ccg gga gat gag gca gga aag ttt gaa gta aat gcc	4748
Phe Asp Ile Thr Pro Gly Asp Glu Ala Gly Lys Phe Glu Val Asn Ala	
1565	1570 1575
aag ttc ctg ggt gtg gac atg gag cga ttt cag ctt cac tat cag gat	4796
Lys Phe Leu Gly Val Asp Met Glu Arg Phe Gln Leu His Tyr Gln Asp	
1580	1585 1590 1595
ctc ctg cag ctc cag tat gag ggt gtg gct gtc atg aaa ctc ttc aac	4844
Leu Leu Gln Leu Gln Tyr Glu Gly Val Ala Val Met Lys Leu Phe Asn	
1600	1605 1610
aag gcc aaa gtc aat gtc aac ctt ctc atc ttc ctc ctc aac aag aag	4892
Lys Ala Lys Val Asn Val Asn Leu Leu Ile Phe Leu Leu Asn Lys Lys	
1615	1620 1625
ttt ttg cgg aag	
1630	tgacag aggcaaaggg tgctacccaa gcccctctta 4940
Phe Leu Arg Lys	
cctctctgga tgctttcttt aacactaact caccactgtg ctccctgca gacacccaga	5000

Sequence Listing

gctcaggact gggcaaggcc cagggattct cacccttcc ccagctggga ggagcttgcc 5060

tgcctggcca cagacagtgt atcttctaata tggctaaagt gggccttgcc cagagtccag 5120

ctgtgtggct tttatcatgc atgacaaacc cctggcttcc ctgccagatg gattctcatc 5180

ccttacagct gactcttcca ggcaatttcc atagatctgc agtcctgcct ctgccacagt 5240

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aagcagctgt tactccc 5317

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<213> Homo sapiens

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Met Glu Arg Arg Ala Ala Gly Pro Gly Trp Ala Ala Tyr Glu Arg Leu
1 5 10 15

Thr Ala Glu Glu Met Asp Glu Gln Arg Arg Gln Asn Val Ala Tyr Gln
20 25 30

Tyr Leu Cys Arg Leu Glu Glu Ala Lys Arg Trp Met Glu Ala Cys Leu
35 40 45

Lys Glu Glu Leu Pro Ser Pro Val Glu Leu Glu Glu Ser Leu Arg Asn
50 55 60

Gly Val Leu Leu Ala Lys Leu Gly His Cys Phe Ala Pro Ser Val Val
65 70 75 80

Pro Leu Lys Lys Ile Tyr Asp Val Glu Gln Leu Arg Tyr Gln Ala Thr
85 90 95

Gly Leu His Phe Arg His Thr Asp Asn Ile Asn Phe Trp Leu Ser Ala
100 105 110

Sequence Listing

Ile Ala His Ile Gly Leu Pro Ser Thr Phe Phe Pro Glu Thr Thr Asp
 115 120 125

Ile Tyr Asp Lys Lys Asn Met Pro Arg Val Val Tyr Cys Ile His Ala
 130 135 140

Leu Ser Leu Phe Leu Phe Arg Leu Gly Leu Ala Pro Gln Ile His Asp
 145 150 155 160

Leu Tyr Gly Lys Val Lys Phe Thr Ala Glu Glu Leu Ser Asn Met Ala
 165 170 175

Ser Glu Leu Ala Lys Tyr Gly Leu Gln Leu Pro Ala Phe Ser Lys Ile
 180 185 190

Gly Gly Ile Leu Ala Asn Glu Leu Ser Val Asp Glu Ala Ala Val His
 195 200 205

Ala Ala Val Leu Ala Ile Asn Glu Ala Val Glu Arg Gly Val Val Glu
 210 215 220

Asp Thr Leu Ala Ala Leu Gln Asn Pro Ser Ala Leu Leu Glu Asn Leu
 225 230 235 240

Arg Glu Pro Leu Ala Ala Val Tyr Gln Glu Met Leu Ala Gln Ala Lys
 245 250 255

Met Glu Lys Ala Ala Asn Ala Arg Asn His Asp Asp Arg Glu Ser Gln
 260 265 270

Asp Ile Tyr Asp His Tyr Leu Thr Gln Ala Glu Ile Gln Gly Asn Ile
 275 280 285

Asn His Val Asn Val His Gly Ala Leu Glu Val Val Asp Asp Ala Leu
 290 295 300

Glu Arg Gln Ser Pro Glu Ala Leu Leu Lys Ala Leu Gln Asp Pro Ala
 305 310 315 320

Sequence Listing

Leu Ala Leu Arg Gly Val Arg Arg Asp Phe Ala Asp Trp Tyr Leu Glu
 325 330 335

Gln Leu Asn Ser Asp Arg Glu Gln Lys Ala Gln Glu Leu Gly Leu Val
 340 345 350

Glu Leu Leu Glu Lys Glu Glu Val Gln Ala Gly Val Ala Ala Ala Asn
 355 360 365

Thr Lys Gly Asp Gln Glu Gln Ala Met Leu His Ala Val Gln Arg Ile
 370 375 380

Asn Lys Ala Ile Arg Arg Gly Val Ala Ala Asp Thr Val Lys Glu Leu
 385 390 395 400

Met Cys Pro Glu Ala Gln Leu Pro Pro Val Tyr Pro Val Ala Ser Ser
 405 410 415

Met Tyr Gln Leu Glu Leu Ala Val Leu Gln Gln Gln Gln Gly Glu Leu
 420 425 430

Gly Gln Glu Glu Leu Phe Val Ala Val Glu Met Leu Ser Ala Val Val
 435 440 445

Leu Ile Asn Arg Ala Leu Glu Ala Arg Asp Ala Ser Gly Phe Trp Ser
 450 455 460

Ser Leu Val Asn Pro Ala Thr Gly Leu Ala Glu Val Glu Gly Glu Asn
 465 470 475 480

Ala Gln Arg Tyr Phe Asp Ala Leu Leu Lys Leu Arg Gln Glu Arg Gly
 485 490 495

Met Gly Glu Asp Phe Leu Ser Trp Asn Asp Leu Gln Ala Thr Val Ser
 500 505 510

Gln Val Asn Ala Gln Thr Gln Glu Glu Thr Asp Arg Val Leu Ala Val
 515 520 525

Ser Leu Ile Asn Glu Ala Leu Asp Lys Gly Ser Pro Glu Lys Thr Leu

Sequence Listing

530	535	540	
Ser Ala Leu Leu Leu Pro Ala Ala Gly Leu Asp Asp Val Ser Leu Pro			
545	550	555	560
Val Ala Pro Arg Tyr His Leu Leu Leu Val Ala Ala Lys Arg Gln Lys			
565	570	575	
Ala Gln Val Thr Gly Asp Pro Gly Ala Val Leu Trp Leu Glu Glu Ile			
580	585	590	
Arg Gln Gly Val Val Arg Ala Asn Gln Asp Thr Asn Thr Ala Gln Arg			
595	600	605	
Met Ala Leu Gly Val Ala Ala Ile Asn Gln Ala Ile Lys Glu Gly Lys			
610	615	620	
Ala Ala Gln Thr Glu Arg Val Leu Arg Asn Pro Ala Val Ala Leu Arg			
625	630	635	640
Gly Val Val Pro Asp Cys Ala Asn Gly Tyr Gln Arg Ala Leu Glu Ser			
645	650	655	
Ala Met Ala Lys Lys Gln Arg Pro Ala Asp Thr Ala Phe Trp Val Gln			
660	665	670	
His Asp Met Lys Asp Gly Thr Ala Tyr Tyr Phe His Leu Gln Thr Phe			
675	680	685	
Gln Gly Ile Trp Glu Gln Pro Pro Gly Cys Pro Leu Asn Thr Ser His			
690	695	700	
Leu Thr Arg Glu Glu Ile Gln Ser Ala Val Thr Lys Val Thr Ala Ala			
705	710	715	720
Tyr Asp Arg Gln Gln Leu Trp Lys Ala Asn Val Gly Phe Val Ile Gln			
725	730	735	
Leu Gln Ala Arg Leu Arg Gly Phe Leu Val Arg Gln Lys Phe Ala Glu			
740	745	750	

Sequence Listing

His Ser His Phe Leu Arg Thr Trp Leu Pro Ala Val Ile Lys Ile Gln
 755 760 765

Ala His Trp Arg Gly Tyr Arg Gln Arg Lys Ile Tyr Leu Glu Trp Leu
 770 775 780

Gln Tyr Phe Lys Ala Asn Leu Asp Ala Ile Ile Lys Ile Gln Ala Trp
 785 790 795 800

Ala Arg Met Trp Ala Ala Arg Arg Gln Tyr Leu Arg Arg Leu His Tyr
 805 810 815

Phe Gln Lys Asn Val Asn Ser Ile Val Lys Ile Gln Ala Phe Phe Arg
 820 825 830

Ala Arg Lys Ala Gln Asp Asp Tyr Arg Ile Leu Val His Ala Pro His
 835 840 845

Pro Pro Leu Ser Val Val Arg Arg Phe Ala His Leu Leu Asn Gln Ser
 850 855 860

Gln Gln Asp Phe Leu Ala Glu Ala Glu Leu Leu Lys Leu Gln Glu Glu
 865 870 875 880

Val Val Arg Lys Ile Arg Ser Asn Gln Gln Leu Glu Gln Asp Leu Asn
 885 890 895

Ile Met Asp Ile Lys Ile Gly Leu Leu Val Lys Asn Arg Ile Thr Leu
 900 905 910

Gln Glu Val Val Ser His Cys Lys Lys Leu Thr Lys Arg Asn Lys Glu
 915 920 925

Gln Leu Ser Asp Met Met Val Leu Asp Lys Gln Lys Gly Leu Lys Ser
 930 935 940

Leu Ser Lys Glu Lys Arg Gln Lys Leu Glu Ala Tyr Gln His Leu Phe
 945 950 955 960

Sequence Listing

Tyr Leu Leu Gln Thr Gln Pro Ile Tyr Leu Ala Lys Leu Ile Phe Gln
 965 970 975

Met Pro Gln Asn Lys Thr Thr Lys Phe Met Glu Ala Val Ile Phe Ser
 980 985 990

Leu Tyr Asn Tyr Ala Ser Ser Arg Arg Glu Ala Tyr Leu Leu Leu Gln
 995 1000 1005

Leu Phe Lys Thr Ala Leu Gln Glu Glu Ile Lys Ser Lys Val Glu Gln
 1010 1015 1020

Pro Gln Asp Val Val Thr Gly Asn Pro Thr Val Val Arg Leu Val Val
 1025 1030 1035 1040

Arg Phe Tyr Arg Asn Gly Arg Gly Gln Ser Ala Leu Gln Glu Ile Leu
 1045 1050 1055

Gly Lys Val Ile Gln Asp Val Leu Glu Asp Lys Val Leu Ser Val His
 1060 1065 1070

Thr Asp Pro Val His Leu Tyr Lys Asn Trp Ile Asn Gln Thr Glu Ala
 1075 1080 1085

Gln Thr Gly Gln Arg Ser His Leu Pro Tyr Asp Val Thr Pro Glu Gln
 1090 1095 1100

Ala Leu Ser His Pro Glu Val Gln Arg Arg Leu Asp Ile Ala Leu Arg
 1105 1110 1115 1120

Asn Leu Leu Ala Met Thr Asp Lys Phe Leu Leu Ala Ile Thr Ser Ser
 1125 1130 1135

Val Asp Gln Ile Pro Tyr Gly Met Arg Tyr Val Ala Lys Val Leu Lys
 1140 1145 1150

Ala Thr Leu Ala Glu Lys Phe Pro Asp Ala Thr Asp Ser Glu Val Tyr
 1155 1160 1165

Lys Val Val Gly Asn Leu Leu Tyr Tyr Arg Phe Leu Asn Pro Ala Val

Sequence Listing

1170	1175	1180	
Val Ala Pro Asp Ala Phe Asp Ile Val Ala Met Ala Ala Gly Gly Ala			
1185	1190	1195	1200
Leu Ala Ala Pro Gln Arg His Ala Leu Gly Ala Val Ala Gln Leu Leu			
1205	1210	1215	
Gln His Ala Ala Ala Gly Lys Ala Phe Ser Gly Gln Ser Gln His Leu			
1220	1225	1230	
Arg Val Leu Asn Asp Tyr Leu Glu Glu Thr His Leu Lys Phe Arg Lys			
1235	1240	1245	
Phe Ile His Arg Ala Cys Gln Val Pro Glu Pro Glu Glu Arg Phe Ala			
1250	1255	1260	
Val Asp Glu Tyr Ser Asp Met Val Ala Val Ala Lys Pro Met Val Tyr			
1265	1270	1275	1280
Ile Thr Val Gly Glu Leu Val Asn Thr His Arg Leu Leu Leu Glu His			
1285	1290	1295	
Gln Asp Cys Ile Ala Pro Asp His Gln Asp Pro Leu His Glu Leu Leu			
1300	1305	1310	
Glu Asp Leu Gly Glu Leu Pro Thr Ile Pro Asp Leu Ile Gly Glu Ser			
1315	1320	1325	
Ile Ala Ala Asp Gly His Thr Asp Leu Ser Lys Leu Glu Val Ser Leu			
1330	1335	1340	
Thr Leu Thr Asn Lys Phe Glu Gly Leu Glu Ala Asp Ala Asp Asp Ser			
1345	1350	1355	1360
Asn Thr Arg Ser Leu Leu Leu Ser Thr Lys Gln Leu Leu Ala Asp Ile			
1365	1370	1375	
Ile Gln Phe His Pro Gly Asp Thr Leu Lys Glu Ile Leu Ser Leu Ser			
1380	1385	1390	

Sequence Listing

Ala Ser Arg Glu Gln Glu Ala Ala His Lys Gln Leu Met Ser Arg Arg
 1395 1400 1405

Gln Ala Cys Thr Ala Gln Thr Pro Glu Pro Leu Arg Arg His Arg Ser
 1410 1415 1420

Leu Thr Ala His Ser Leu Leu Pro Leu Ala Glu Lys Gln Arg Arg Val
 1425 1430 1435 1440

Leu Arg Asn Leu Arg Arg Leu Glu Ala Leu Gly Leu Val Ser Ala Arg
 1445 1450 1455

Asn Gly Tyr Gln Gly Leu Val Asp Glu Leu Ala Lys Asp Ile Arg Asn
 1460 1465 1470

Gln His Arg His Arg His Arg Arg Lys Ala Glu Leu Val Lys Leu Gln
 1475 1480 1485

Ala Thr Leu Gln Gly Leu Ser Thr Lys Thr Thr Phe Tyr Glu Glu Gln
 1490 1495 1500

Gly Asp Tyr Tyr Ser Gln Tyr Ile Arg Ala Cys Leu Asp His Leu Ala
 1505 1510 1515 1520

Pro Asp Ser Lys Ser Ser Gly Lys Gly Lys Lys Gln Pro Ser Leu His
 1525 1530 1535

Tyr Thr Ala Ala Gln Leu Leu Glu Lys Gly Val Leu Val Glu Ile Glu
 1540 1545 1550

Asp Leu Pro Ala Ser His Phe Arg Asn Val Ile Phe Asp Ile Thr Pro
 1555 1560 1565

Gly Asp Glu Ala Gly Lys Phe Glu Val Asn Ala Lys Phe Leu Gly Val
 1570 1575 1580

Asp Met Glu Arg Phe Gln Leu His Tyr Gln Asp Leu Leu Gln Leu Gln
 1585 1590 1595 1600

Sequence Listing

Tyr Glu Gly Val Ala Val Met Lys Leu Phe Asn Lys Ala Lys Val Asn
 1605 1610 1615

Val Asn Leu Leu Ile Phe Leu Leu Asn Lys Lys Phe Leu Arg Lys
 1620 1625 1630

<210> 5
 <211> 3608
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (424)..(1908)
 <223> Clone LBFL110

<400> 5
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 cctcagaaca tctcctgata gctacccagg accaggcacc aaggacaggg agtcccaggc 120
 gcacaccccc cattctgggt cccccaggcc cagaccccca ctctgccaca ggttgcatct 180
 tgacctgggc ctctgcaga agtggccctt gtggctcctgc tctgagactc gtccttgggc 240
 gccctgcag cccctttcta tgactccatc tggatttggc tggtgtggg gacgcgttcc 300
 gagggggcggc ctggctctca gcgtgggtggc agccagctct ctggccacca tggcaaattgc 360
 tgagatctga ggggacaagg ctctacagcc tcagccaggg gcactcagct gttgcagggt 420
 gtg atg gag aac aaa gct atg tac cta cac acc gtc agc gac tgt 465
 Met Glu Asn Lys Ala Met Tyr Leu His Thr Val Ser Asp Cys
 1 5 10
 gac acc agc tcc atc tgt gag gat tcc ttt gat ggc agg agc ctg tcc 513

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Sequence Listing

Gly Gln Gln Ser Asp Thr Ala Gln Leu Glu Leu Tyr Gln Leu Gln Val	
175	180 185 190
gag agc aac agt agc cag ctg ctg ctg agg cgc cac gcg ggc ctg ctg	1041
Glu Ser Asn Ser Ser Gln Leu Leu Leu Arg Arg His Ala Gly Leu Leu	
195	200 205
gac ggg ctg gcg cgc agg gtg ggc atc ctg ggc gag gag ctg gcc gac	1089
Asp Gly Leu Ala Arg Arg Val Gly Ile Leu Gly Glu Glu Leu Ala Asp	
210	215 220
gtg ggc ggc gtg ctg cgc ggc ctc aac cac agc ctg tcc tac gac gtg	1137
Val Gly Gly Val Leu Arg Gly Leu Asn His Ser Leu Ser Tyr Asp Val	
225	230 235
gcc ctc cac cgc acg cgg ctg cag gac ctg cgg gtg ctg gtg agc aac	1185
Ala Leu His Arg Thr Arg Leu Gln Asp Leu Arg Val Leu Val Ser Asn	
240	245 250
gcc agc gag gac acg cgc cgc ctg cgc ctg gcg cac gta ggc atg gag	1233
Ala Ser Glu Asp Thr Arg Arg Leu Arg Leu Ala His Val Gly Met Glu	
255	260 265 270
ctg cag ctg aag cag gag ctg gcc atg ctc aac gcg gtc acc gag gac	1281
Leu Gln Leu Lys Gln Glu Leu Ala Met Leu Asn Ala Val Thr Glu Asp	
275	280 285
ctg cgc ctc aag gac tgg gag cac tcc atc gca ctg cgg aac atc tcc	1329
Leu Arg Leu Lys Asp Trp Glu His Ser Ile Ala Leu Arg Asn Ile Ser	
290	295 300
ctc gcg aaa ggg cca ccg gga ccc aaa ggt gat cag ggg cat gaa gga	1377
Leu Ala Lys Gly Pro Pro Gly Pro Lys Gly Asp Gln Gly His Glu Gly	
305	310 315
aag gaa ggc agg cct ggc atc cct gga ttg cct gga ctt cga ggt ctg	1425
Lys Glu Gly Arg Pro Gly Ile Pro Gly Leu Pro Gly Leu Arg Gly Leu	
320	325 330
ccc ggg gag aga ggt acc cca gga ttg ccc ggg ccc aag ggc gat gat	1473

Sequence Listing

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Pro Gly Glu Arg Gly Thr Pro Gly Leu Pro Gly Pro Lys Gly Asp Asp
335                      340                      345                      350

ggg aag ctg ggg gcc aca gga cca atg ggc atg cgt ggg ttc aaa ggt      1521
Gly Lys Leu Gly Ala Thr Gly Pro Met Gly Met Arg Gly Phe Lys Gly
                      355                      360                      365

gac cga ggc cca aaa gga gag aaa gga gag aaa gga gac aga gct ggg      1569
Asp Arg Gly Pro Lys Gly Glu Lys Gly Glu Lys Gly Asp Arg Ala Gly
                      370                      375                      380

gat gcc agt ggc gtg gag gcc ccg atg atg atc cgc ctg gtg aat ggc      1617
Asp Ala Ser Gly Val Glu Ala Pro Met Met Ile Arg Leu Val Asn Gly
                      385                      390                      395

tca ggt ccg cac gag ggc cgc gtg gaa gtg tac cac gac cgg cgt tgg      1665
Ser Gly Pro His Glu Gly Arg Val Glu Val Tyr His Asp Arg Arg Trp
                      400                      405                      410

ggc acc gtg tgt gac gac ggc tgg gac aag aag gac gga gac gtg gtg      1713
Gly Thr Val Cys Asp Asp Gly Trp Asp Lys Lys Asp Gly Asp Val Val
415                      420                      425                      430

tgc cgc atg ctc ggc ttc cgc ggt gtg gag gag gtg tac cgc aca gct      1761
Cys Arg Met Leu Gly Phe Arg Gly Val Glu Glu Val Tyr Arg Thr Ala
                      435                      440                      445

cga ttc ggg caa ggc act ggg agg atc tgg atg gat gac gtt gcc tgc      1809
Arg Phe Gly Gln Gly Thr Gly Arg Ile Trp Met Asp Asp Val Ala Cys
                      450                      455                      460

aag ggc aca gag gaa acc atc ttc cgc tgc agc ttc tcc aaa tgg ggg      1857
Lys Gly Thr Glu Glu Thr Ile Phe Arg Cys Ser Phe Ser Lys Trp Gly
                      465                      470                      475

gtg aca aac tgt gga cat gcc gaa gat gcc agc gtg aca tgc aac aga      1905
Val Thr Asn Cys Gly His Ala Glu Asp Ala Ser Val Thr Cys Asn Arg
                      480                      485                      490

cac      tg aaagtgggca gagcccaagt tcggggctct gcacagagca cccttcctgc      1960

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Sequence Listing

His

495

atccctgggg tggggcacag ctgggggcca ccctgaccat gcctcgacca caccctgtcc	2020
agcatttctca gtcctcacac ctgcatccca ggaccgtggg ggccggtcgt catttccctc	2080
ttgaacatgt gctccgaagt ataactctgg gacctactgc ccgtctctct cttccaccag	2140
gttcttgcac gaggagccct gatcaactgg atcaccactt tgcccagcct ctgaacacca	2200
tgcaccaggc ctcaatatcc cagttccctt tggcctttta gttacagggt aatgctgaga	2260
atgtgtcaga gacaagtgca gcagcagcga tgggtggtag tatagatcat ttactcttca	2320
gacaattccc aaacctccat tagtccaaga gtttctacat cttcctcccc agcaagaggc	2380
aacgtcaagt gatgaatttc ccccttttac tctgcctctg ctccccattt gctagtttga	2440
ggaagtgaca tagaggagaa gccagctgta ggggcaagag gaaatgcaa gtcacctgca	2500
ggaatccagc tagatttga gaagggaatg aaactaacat tgaatgacta ccatggcacg	2560
ctaaatagta tcttgggtgc caaattcatg tatccactta gctgcattgg tccagggcat	2620
gtcagtctgg atacagcctt acctccagggt agcacttaac tgggtccattc acctagactg	2680
caagtaagaa gacaaaatga ctgagaccgt gtgcccacct gaacttattg tctttacttg	2740
gcctgagcta aaagcttggg tgcaggacct gtgtaactag aaagttgcct acttcagaac	2800
ctccagggcg tgagtgcaag gtcaaactg actggcttcc aggccgacca tcaatgtagg	2860
aggagagctg atgtggaggg tgacatgggg gctgcccattg ttaaacctga gtccagtgt	2920
ctggcattgg gcagtcacgg ttaaagccaa gtcattgtgt tctcagctgt ttggagggtga	2980
tgattttgca tcttccaagc ctcttcaggt gtgaatctgt ggtcaggaaa acacaagtcc	3040
taatggaacc cttagggggg aaggaaatga agattcccta taacctctgg ggggtggggag	3100

Sequence Listing

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taggaataag gggcttgggc ctccataaat ctgcaatctg caccctcctc ctagagacag      3160
ggagatcgtg ttctgctttt tacatgagga gcagaactgg gccatacaca tgttcaagaa      3220
ctaggggagc tacctggtag caagtgagtg cagacccacc tcacctggg ggaatctcaa      3280
actcataggc ctgagataca cgatcacctg tcatatcagg tgagcactgg cctgcttggg      3340
gagagacctg ggccctcca ggtgtaggaa cagcaacact cctggctgac aactaagcca      3400
atatggcctt aggtcattct tgcttccaat atgcttgcca ctccttaaata gtcctaataga      3460
tgagaaactc tctttctgac caattgctat gtttacataa cacgcatgta ctcatgcatc      3520
ccttgccaga gccatatat gtatgcatat ataaacatag cactttttac tacatagctc      3580
agcacattgc aaggtttgca tttaagtt      3608

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<210> 6

<211> 495

<212> PRT

<213> Homo sapiens

<400> 6

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Met Glu Asn Lys Ala Met Tyr Leu His Thr Val Ser Asp Cys Asp Thr
  1             5             10             15

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Ser Ser Ile Cys Glu Asp Ser Phe Asp Gly Arg Ser Leu Ser Lys Leu
      20             25             30

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Asn Leu Cys Glu Asp Gly Pro Cys His Lys Arg Arg Ala Ser Ile Cys
  35             40             45

```

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Cys Thr Gln Leu Gly Ser Leu Ser Ala Leu Lys His Ala Val Leu Gly
  50             55             60

```

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Leu Tyr Leu Leu Val Phe Leu Ile Leu Val Gly Ile Phe Ile Leu Ala
  65             70             75             80

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Sequence Listing

Val Ser Arg Pro Arg Ser Ser Pro Asp Asp Leu Lys Ala Leu Thr Arg
 85 90 95

Asn Val Asn Arg Leu Asn Glu Ser Phe Arg Asp Leu Gln Leu Arg Leu
 100 105 110

Leu Gln Ala Pro Leu Gln Ala Asp Leu Thr Glu Gln Val Trp Lys Val
 115 120 125

Gln Asp Ala Leu Gln Asn Gln Ser Asp Ser Leu Leu Ala Leu Ala Gly
 130 135 140

Ala Val Gln Arg Leu Glu Gly Ala Leu Trp Gly Leu Gln Ala Gln Ala
 145 150 155 160

Val Gln Thr Glu Gln Ala Val Ala Leu Leu Arg Asp Arg Thr Gly Gln
 165 170 175

Gln Ser Asp Thr Ala Gln Leu Glu Leu Tyr Gln Leu Gln Val Glu Ser
 180 185 190

Asn Ser Ser Gln Leu Leu Leu Arg Arg His Ala Gly Leu Leu Asp Gly
 195 200 205

Leu Ala Arg Arg Val Gly Ile Leu Gly Glu Glu Leu Ala Asp Val Gly
 210 215 220

Gly Val Leu Arg Gly Leu Asn His Ser Leu Ser Tyr Asp Val Ala Leu
 225 230 235 240

His Arg Thr Arg Leu Gln Asp Leu Arg Val Leu Val Ser Asn Ala Ser
 245 250 255

Glu Asp Thr Arg Arg Leu Arg Leu Ala His Val Gly Met Glu Leu Gln
 260 265 270

Leu Lys Gln Glu Leu Ala Met Leu Asn Ala Val Thr Glu Asp Leu Arg
 275 280 285

Sequence Listing

Leu Lys Asp Trp Glu His Ser Ile Ala Leu Arg Asn Ile Ser Leu Ala
 290 295 300

Lys Gly Pro Pro Gly Pro Lys Gly Asp Gln Gly His Glu Gly Lys Glu
 305 310 315 320

Gly Arg Pro Gly Ile Pro Gly Leu Pro Gly Leu Arg Gly Leu Pro Gly
 325 330 335

Glu Arg Gly Thr Pro Gly Leu Pro Gly Pro Lys Gly Asp Asp Gly Lys
 340 345 350

Leu Gly Ala Thr Gly Pro Met Gly Met Arg Gly Phe Lys Gly Asp Arg
 355 360 365

Gly Pro Lys Gly Glu Lys Gly Glu Lys Gly Asp Arg Ala Gly Asp Ala
 370 375 380

Ser Gly Val Glu Ala Pro Met Met Ile Arg Leu Val Asn Gly Ser Gly
 385 390 395 400

Pro His Glu Gly Arg Val Glu Val Tyr His Asp Arg Arg Trp Gly Thr
 405 410 415

Val Cys Asp Asp Gly Trp Asp Lys Lys Asp Gly Asp Val Val Cys Arg
 420 425 430

Met Leu Gly Phe Arg Gly Val Glu Glu Val Tyr Arg Thr Ala Arg Phe
 435 440 445

Gly Gln Gly Thr Gly Arg Ile Trp Met Asp Asp Val Ala Cys Lys Gly
 450 455 460

Thr Glu Glu Thr Ile Phe Arg Cys Ser Phe Ser Lys Trp Gly Val Thr
 465 470 475 480

Asn Cys Gly His Ala Glu Asp Ala Ser Val Thr Cys Asn Arg His
 485 490 495

Sequence Listing

<210> 7
 <211> 3162
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (405) .. (1835)
 <223> Clone LBFL123

<400> 7

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gaggagaagg cgaaagagaa ggtggagctc agagaagggg gccggctccc cagctccatg	120
tgggccgccgc cgctgcgggt ctgtgggggc agagggcggc ggctcccagg gcagcgcgta	180
gcgggaccga ttgcctaata ctccggcagg ggccggggcc gcagctggct cggataaata	240
gccgcccggc tggcccgag ctgcagggga gagcggcggc cgcgatcccc accacaccac	300
cagcccggcc gcacggggca ctgagccggg tgctgagcac cggaggcccc gccgaggccg	360
ggactcagga cctgcagaga aacgcctcct gattttgtct taca atg gaa ctt	413
	Met Glu Leu
	1
aaa aag tcg cct gac ggt gga tgg ggc tgg gtg att gtg ttt gtc tcc	461
Lys Lys Ser Pro Asp Gly Gly Trp Gly Trp Val Ile Val Phe Val Ser	
5 10 15	
ttc ctt act cag ttt ttg tgt tac gga tcc cca cta gct gtt gga gtc	509
Phe Leu Thr Gln Phe Leu Cys Tyr Gly Ser Pro Leu Ala Val Gly Val	
20 25 30 35	
ctg tac ata gaa tgg ctg gat gcc ttt ggt gaa gga aaa gga aaa aca	557
Leu Tyr Ile Glu Trp Leu Asp Ala Phe Gly Glu Gly Lys Gly Lys Thr	
40 45 50	

Sequence Listing

gcc tgg gtt gga tcc ctg gca agt gga gtt ggc ttg ctt gca agt cct Ala Trp Val Gly Ser Leu Ala Ser Gly Val Gly Leu Leu Ala Ser Pro 55 60 65	605
gtc tgc agt ctc tgt gtc tca tct ttt gga gca aga cct gtc aca atc Val Cys Ser Leu Cys Val Ser Ser Phe Gly Ala Arg Pro Val Thr Ile 70 75 80	653
ttc agt ggc ttc atg gtg gct gga ggc ctg atg ttg agc agt ttt gct Phe Ser Gly Phe Met Val Ala Gly Gly Leu Met Leu Ser Ser Phe Ala 85 90 95	701
ccc aat atc tac ttt ctg ttt ttt tcc tat ggc att gtt gta ggt tca Pro Asn Ile Tyr Phe Leu Phe Phe Ser Tyr Gly Ile Val Val Gly Ser 100 105 110 115	749
agc gtt ggc ctt ttc ata tat gct gct ctg cag agg atg ctg gtt gag Ser Val Gly Leu Phe Ile Tyr Ala Ala Leu Gln Arg Met Leu Val Glu 120 125 130	797
ttc tat gga ctg gat gga tgc ttg ctg att gtg ggt gct tta gct tta Phe Tyr Gly Leu Asp Gly Cys Leu Leu Ile Val Gly Ala Leu Ala Leu 135 140 145	845
aat ata tta gcc tgt ggc agt ctg atg aga ccc ctc caa tct tct gat Asn Ile Leu Ala Cys Gly Ser Leu Met Arg Pro Leu Gln Ser Ser Asp 150 155 160	893
tgt cct ttg cct aaa aaa ata gct cca gaa gat cta cca gat aaa tac Cys Pro Leu Pro Lys Lys Ile Ala Pro Glu Asp Leu Pro Asp Lys Tyr 165 170 175	941
tcc att tac aat gaa aaa gga aag aat ctg gaa gaa aac ata aac att Ser Ile Tyr Asn Glu Lys Gly Lys Asn Leu Glu Glu Asn Ile Asn Ile 180 185 190 195	989
ctt gac aag agc tac agt agt gag gaa aaa tgc agg atc acg tta gcc Leu Asp Lys Ser Tyr Ser Ser Glu Glu Lys Cys Arg Ile Thr Leu Ala 200 205 210	1037

Sequence Listing

aat ggt gac tgg aaa caa gac agc cta ctt cat aaa aac ccc aca gtg Asn Gly Asp Trp Lys Gln Asp Ser Leu Leu His Lys Asn Pro Thr Val 215 220 225	1085
aca cac aca aaa gag cct gaa acg tac aaa aag aaa gtt gca gaa cag Thr His Thr Lys Glu Pro Glu Thr Tyr Lys Lys Lys Val Ala Glu Gln 230 235 240	1133
aca tat ttt tgc aaa cag ctt gcc aag agg aag tgg cag tta tat aaa Thr Tyr Phe Cys Lys Gln Leu Ala Lys Arg Lys Trp Gln Leu Tyr Lys 245 250 255	1181
aac tac tgt ggt gaa act gtg gct ctt ttt aaa aac aaa gta ttt tca Asn Tyr Cys Gly Glu Thr Val Ala Leu Phe Lys Asn Lys Val Phe Ser 260 265 270 275	1229
gcc ctt ttc att gct atc tta ctc ttt gac atc gga ggg ttt cca cct Ala Leu Phe Ile Ala Ile Leu Leu Phe Asp Ile Gly Gly Phe Pro Pro 280 285 290	1277
tca tta ctt atg gaa gat gta gca aga agt tca aac gtg aaa gaa gaa Ser Leu Leu Met Glu Asp Val Ala Arg Ser Ser Asn Val Lys Glu Glu 295 300 305	1325
gag ttt att atg cca ctt att tcc att ata ggc att atg aca gca gtt Glu Phe Ile Met Pro Leu Ile Ser Ile Ile Gly Ile Met Thr Ala Val 310 315 320	1373
ggt aaa ctg ctt tta ggg ata ctg gct gac ttc aag tgg att aat acc Gly Lys Leu Leu Leu Gly Ile Leu Ala Asp Phe Lys Trp Ile Asn Thr 325 330 335	1421
ttg tat ctt tat gtt gct acc tta atc atc atg ggc cta gcc ttg tgt Leu Tyr Leu Tyr Val Ala Thr Leu Ile Ile Met Gly Leu Ala Leu Cys 340 345 350 355	1469
gca att cca ttt gcc aaa agc tat gtc aca ttg gcg ttg ctt tct ggg Ala Ile Pro Phe Ala Lys Ser Tyr Val Thr Leu Ala Leu Leu Ser Gly 360 365 370	1517

Sequence Listing

atc cta ggg ttt ctt act ggt aat tgg tcc atc ttt cca tat gtg acc	1565
Ile Leu Gly Phe Leu Thr Gly Asn Trp Ser Ile Phe Pro Tyr Val Thr	
375 380 385	
acg aag act gtg gga att gaa aaa tta gcc cat gcc tat ggg ata tta	1613
Thr Lys Thr Val Gly Ile Glu Lys Leu Ala His Ala Tyr Gly Ile Leu	
390 395 400	
atg ttc ttt gct gga ctt gga aat agc cta gga cca ccc atc gtt ggt	1661
Met Phe Phe Ala Gly Leu Gly Asn Ser Leu Gly Pro Pro Ile Val Gly	
405 410 415	
tgg ttt tat gac tgg acc cag acc tat gat att gca ttt tat ttt agt	1709
Trp Phe Tyr Asp Trp Thr Gln Thr Tyr Asp Ile Ala Phe Tyr Phe Ser	
420 425 430 435	
ggc ttc tgc gtc ctg ctg gga ggt ttt att ctg ctg ctg gca gcc ttg	1757
Gly Phe Cys Val Leu Leu Gly Gly Phe Ile Leu Leu Leu Ala Ala Leu	
440 445 450	
ccc tct tgg gat aca tgc aac aag caa ctc ccc aag cca gct cca aca	1805
Pro Ser Trp Asp Thr Cys Asn Lys Gln Leu Pro Lys Pro Ala Pro Thr	
455 460 465	
act ttc ttg tac aaa gtt gcc tct aat gtt tagaa gaatattgga	1850
Thr Phe Leu Tyr Lys Val Ala Ser Asn Val	
470 475	
agacactatt tttgctattt tataccatat agcaacgata ttttaacaga tctcaagcaa	1910
atcttctaga gtcaagacta ttttctcata gcaaaatttc acaatgactg actctgaatg	1970
aattattttt ttttttttat atatcctatt ttttatgtag tgtatgcgta gcctctatct	2030
cgtatttttt tctattttct cccccacac catcaatggg actattctgt tttgctgtta	2090
ttcactagtt cttaacattg taaaaagttt gaccagcctc agaaggcttt ctctgtgtaa	2150
agaagtataa tttctctgct gactccattt aatccactgc aaggcaccta gagagactgc	2210

Sequence Listing

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tcctatttta aaagtgatgc aagcatcatg ataagatatg tgtgaagccc actaggaaat      2270
aatcattct cttctctatg tttgacttgc tagtaaacag aagacttcaa gccagccagg      2330
aaattaaagt ggcgactaaa acagccttaa gaattgcagt ggagcaaatt ggtcattttt      2390
taaaaaata tattttaacc tacagtcacc agttttcatt attctattta cctcactgaa      2450
gtactcgcat gttgtttggt acccactgag caactgtttc agttcctaag gtatttgctg      2510
agatgtgggt gaactccaaa tggagaagta gtcactgtag actttcttca tggttgacca      2570
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taaagaaatg ggttttaaac tttggtatgc atcagaattc cctatagatc tttttgaaaa      3050
tataggtacc tgggtatcac acatagaact tttaattctg ctggtgtagg ctgttgccca      3110
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<211> 477

<212> PRT

<213> Homo sapiens

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Sequence Listing

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35	40	45	
Gly Lys Thr Ala Trp Val Gly Ser Leu Ala Ser Gly Val Gly Leu Leu			
50	55	60	
Ala Ser Pro Val Cys Ser Leu Cys Val Ser Ser Phe Gly Ala Arg Pro			
65	70	75	80
Val Thr Ile Phe Ser Gly Phe Met Val Ala Gly Gly Leu Met Leu Ser			
85	90	95	
Ser Phe Ala Pro Asn Ile Tyr Phe Leu Phe Phe Ser Tyr Gly Ile Val			
100	105	110	
Val Gly Ser Ser Val Gly Leu Phe Ile Tyr Ala Ala Leu Gln Arg Met			
115	120	125	
Leu Val Glu Phe Tyr Gly Leu Asp Gly Cys Leu Leu Ile Val Gly Ala			
130	135	140	
Leu Ala Leu Asn Ile Leu Ala Cys Gly Ser Leu Met Arg Pro Leu Gln			
145	150	155	160
Ser Ser Asp Cys Pro Leu Pro Lys Lys Ile Ala Pro Glu Asp Leu Pro			
165	170	175	
Asp Lys Tyr Ser Ile Tyr Asn Glu Lys Gly Lys Asn Leu Glu Glu Asn			
180	185	190	
Ile Asn Ile Leu Asp Lys Ser Tyr Ser Ser Glu Glu Lys Cys Arg Ile			
195	200	205	
Thr Leu Ala Asn Gly Asp Trp Lys Gln Asp Ser Leu Leu His Lys Asn			
210	215	220	

Sequence Listing

Pro Thr Val Thr His Thr Lys Glu Pro Glu Thr Tyr Lys Lys Lys Val
 225 230 235 240

Ala Glu Gln Thr Tyr Phe Cys Lys Gln Leu Ala Lys Arg Lys Trp Gln
 245 250 255

Leu Tyr Lys Asn Tyr Cys Gly Glu Thr Val Ala Leu Phe Lys Asn Lys
 260 265 270

Val Phe Ser Ala Leu Phe Ile Ala Ile Leu Leu Phe Asp Ile Gly Gly
 275 280 285

Phe Pro Pro Ser Leu Leu Met Glu Asp Val Ala Arg Ser Ser Asn Val
 290 295 300

Lys Glu Glu Glu Phe Ile Met Pro Leu Ile Ser Ile Ile Gly Ile Met
 305 310 315 320

Thr Ala Val Gly Lys Leu Leu Leu Gly Ile Leu Ala Asp Phe Lys Trp
 325 330 335

Ile Asn Thr Leu Tyr Leu Tyr Val Ala Thr Leu Ile Ile Met Gly Leu
 340 345 350

Ala Leu Cys Ala Ile Pro Phe Ala Lys Ser Tyr Val Thr Leu Ala Leu
 355 360 365

Leu Ser Gly Ile Leu Gly Phe Leu Thr Gly Asn Trp Ser Ile Phe Pro
 370 375 380

Tyr Val Thr Thr Lys Thr Val Gly Ile Glu Lys Leu Ala His Ala Tyr
 385 390 395 400

Gly Ile Leu Met Phe Phe Ala Gly Leu Gly Asn Ser Leu Gly Pro Pro
 405 410 415

Ile Val Gly Trp Phe Tyr Asp Trp Thr Gln Thr Tyr Asp Ile Ala Phe
 420 425 430

Sequence Listing

Tyr Phe Ser Gly Phe Cys Val Leu Leu Gly Gly Phe Ile Leu Leu Leu
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 Met Asp Met Met Leu Leu Val Gln
 1 5
 ggt gct tgt tgc tcg aac cag tgg ctg gcg gcg gtg ctc ctc agc ctg 160
 Gly Ala Cys Cys Ser Asn Gln Trp Leu Ala Ala Val Leu Leu Ser Leu
 10 15 20
 tgc tgc ctg cta ccc tcc tgc ctc ccg gct gga cag agt gtg gac ttc 208
 Cys Cys Leu Leu Pro Ser Cys Leu Pro Ala Gly Gln Ser Val Asp Phe
 25 30 35 40
 ccc tgg gcg gcc gtg gac aac atg atg gtc aga aaa ggg gac acg gcg 256
 Pro Trp Ala Ala Val Asp Asn Met Met Val Arg Lys Gly Asp Thr Ala
 45 50 55

Sequence Listing

gtg ctt agg tgt tat ttg gaa gat gga gct tca aag ggt gcc tgg ctg	304
Val Leu Arg Cys Tyr Leu Glu Asp Gly Ala Ser Lys Gly Ala Trp Leu	
60 65 70	
aac cgg tca agt att att ttt gcg gga ggt gat aag tgg tca gtg gat	352
Asn Arg Ser Ser Ile Ile Phe Ala Gly Gly Asp Lys Trp Ser Val Asp	
75 80 85	
cct cga gtt tca att tca aca ttg aat aaa agg gac tac agc ctc cag	400
Pro Arg Val Ser Ile Ser Thr Leu Asn Lys Arg Asp Tyr Ser Leu Gln	
90 95 100	
ata cag aat gta gat gtg aca gat gat ggc cca tac acg tgt tct gtt	448
Ile Gln Asn Val Asp Val Thr Asp Asp Gly Pro Tyr Thr Cys Ser Val	
105 110 115 120	
cag act caa cat aca ccc aga aca atg cag gtg cat cta act gtg caa	496
Gln Thr Gln His Thr Pro Arg Thr Met Gln Val His Leu Thr Val Gln	
125 130 135	
gtt cct cct aag ata tat gac atc tca aat gat atg acc gtc aat gaa	544
Val Pro Pro Lys Ile Tyr Asp Ile Ser Asn Asp Met Thr Val Asn Glu	
140 145 150	
gga acc aac gtc act ctt act tgt ttg gcc act ggg aaa cca gag cct	592
Gly Thr Asn Val Thr Leu Thr Cys Leu Ala Thr Gly Lys Pro Glu Pro	
155 160 165	
tcc att tct tgg cga cac atc tcc cca tca gcg aaa cca ttt gaa aat	640
Ser Ile Ser Trp Arg His Ile Ser Pro Ser Ala Lys Pro Phe Glu Asn	
170 175 180	
gga caa tat ttg gac att tat gga att aca agg gac cag gct ggg gaa	688
Gly Gln Tyr Leu Asp Ile Tyr Gly Ile Thr Arg Asp Gln Ala Gly Glu	
185 190 195 200	
tat gaa tgc agt gcg gaa aat gat gtg tca ttc cca gat gtg agg aaa	736
Tyr Glu Cys Ser Ala Glu Asn Asp Val Ser Phe Pro Asp Val Arg Lys	
205 210 215	

Sequence Listing

gta aaa gtt gtt gtc aac ttt gct cct act att cag gaa att aaa tct Val Lys Val Val Val Asn Phe Ala Pro Thr Ile Gln Glu Ile Lys Ser 220 225 230	784
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ggc gtg ccg cct cca gcc ttt gaa tgg tac aaa gga gag aag aag ctc Gly Val Pro Pro Pro Ala Phe Glu Trp Tyr Lys Gly Glu Lys Lys Leu 250 255 260	880
ttc aat ggc caa caa gga att att att caa aat ttt agc aca aga tcc Phe Asn Gly Gln Gln Gly Ile Ile Ile Gln Asn Phe Ser Thr Arg Ser 265 270 275 280	928
att ctc act gtt acc aac gtg aca cag gag cac ttc ggc aat tat act Ile Leu Thr Val Thr Asn Val Thr Gln Glu His Phe Gly Asn Tyr Thr 285 290 295	976
tgt gtg gct gcc aac aag cta ggc aca acc aat gcg agc ctg cct ctt Cys Val Ala Ala Asn Lys Leu Gly Thr Thr Asn Ala Ser Leu Pro Leu 300 305 310	1024
aac cct cca agt aca gcc cag tat gga att acc ggg agc gct gat gtt Asn Pro Pro Ser Thr Ala Gln Tyr Gly Ile Thr Gly Ser Ala Asp Val 315 320 325	1072
ctt ttc tcc tgc tgg tac ctt gtg ttg aca ctg tcc tct ttc acc agc Leu Phe Ser Cys Trp Tyr Leu Val Leu Thr Leu Ser Ser Phe Thr Ser 330 335 340	1120
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aaagcagcgt gggatataat cagcagtgct tacatgggga tgatcgcctt ctgtagaatt	1290

Sequence Listing

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Sequence Listing

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Sequence Listing

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agaaggtagg aagaaagaaa ggatgagagg gaaggaagaa tcagagtatt agggtagtta	4110
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ctgtctttta gtaaaccatc atatttcata acctgatgta aaatatgttg tactgtttcc	4830
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Sequence Listing

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4891

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<211> 354

<212> PRT

<213> Homo sapiens

<400> 10

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Leu Ala Ala Val Leu Leu Ser Leu Cys Cys Leu Leu Pro Ser Cys Leu
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Pro Ala Gly Gln Ser Val Asp Phe Pro Trp Ala Ala Val Asp Asn Met
 35 40 45

Met Val Arg Lys Gly Asp Thr Ala Val Leu Arg Cys Tyr Leu Glu Asp
 50 55 60

Gly Ala Ser Lys Gly Ala Trp Leu Asn Arg Ser Ser Ile Ile Phe Ala
 65 70 75 80

Gly Gly Asp Lys Trp Ser Val Asp Pro Arg Val Ser Ile Ser Thr Leu
 85 90 95

Asn Lys Arg Asp Tyr Ser Leu Gln Ile Gln Asn Val Asp Val Thr Asp
 100 105 110

Asp Gly Pro Tyr Thr Cys Ser Val Gln Thr Gln His Thr Pro Arg Thr
 115 120 125

Met Gln Val His Leu Thr Val Gln Val Pro Pro Lys Ile Tyr Asp Ile
 130 135 140

Ser Asn Asp Met Thr Val Asn Glu Gly Thr Asn Val Thr Leu Thr Cys
 145 150 155 160

Leu Ala Thr Gly Lys Pro Glu Pro Ser Ile Ser Trp Arg His Ile Ser

Sequence Listing

165	170	175
Pro Ser Ala Lys Pro Phe Glu Asn Gly Gln Tyr Leu Asp Ile Tyr Gly		
180	185	190
Ile Thr Arg Asp Gln Ala Gly Glu Tyr Glu Cys Ser Ala Glu Asn Asp		
195	200	205
Val Ser Phe Pro Asp Val Arg Lys Val Lys Val Val Val Asn Phe Ala		
210	215	220
Pro Thr Ile Gln Glu Ile Lys Ser Gly Thr Val Thr Pro Gly Arg Ser		
225	230	235 240
Gly Leu Ile Arg Cys Glu Gly Ala Gly Val Pro Pro Pro Ala Phe Glu		
245	250	255
Trp Tyr Lys Gly Glu Lys Lys Leu Phe Asn Gly Gln Gln Gly Ile Ile		
260	265	270
Ile Gln Asn Phe Ser Thr Arg Ser Ile Leu Thr Val Thr Asn Val Thr		
275	280	285
Gln Glu His Phe Gly Asn Tyr Thr Cys Val Ala Ala Asn Lys Leu Gly		
290	295	300
Thr Thr Asn Ala Ser Leu Pro Leu Asn Pro Pro Ser Thr Ala Gln Tyr		
305	310	315 320
Gly Ile Thr Gly Ser Ala Asp Val Leu Phe Ser Cys Trp Tyr Leu Val		
325	330	335
Leu Thr Leu Ser Ser Phe Thr Ser Ile Phe Tyr Leu Lys Asn Ala Ile		
340	345	350
Leu Gln		

<210> 11

Sequence Listing

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 Met Ala Phe
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 gcc cgc cgg ctc ctg cgc ggg cca ctg tcg ggg ccg ctg ctc ggg cgg 279
 Ala Arg Arg Leu Leu Arg Gly Pro Leu Ser Gly Pro Leu Leu Gly Arg
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 Arg Gly Val Cys Ala Gly Ala Met Ala Pro Pro Arg Arg Phe Val Leu
 20 25 30 35
 gag ctt ccc gac tgc acc ctg gct cac ttc gcc cta ggc gcc gac gcc 375
 Glu Leu Pro Asp Cys Thr Leu Ala His Phe Ala Leu Gly Ala Asp Ala
 40 45 50
 ccc ggc gac gca gac gcc ccc gac ccc cgc ctg gcg gcg ctg ctg ggg 423
 Pro Gly Asp Ala Asp Ala Pro Asp Pro Arg Leu Ala Ala Leu Leu Gly
 55 60 65
 ccc ccg gag cgc agc tac tcg ctg tgc gtg ccc gtg acc ccg gac gcc 471
 Pro Pro Glu Arg Ser Tyr Ser Leu Cys Val Pro Val Thr Pro Asp Ala
 70 75 80

Sequence Listing

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Gly Cys Gly Ala Arg Val Arg Ala Ala Arg Leu His Gln Arg Leu Leu	
85 90 95	
cac cag ctg cgc cgc ggc ccc ttc cag cgg tgc cag ctg ctc agg ctg	567
His Gln Leu Arg Arg Gly Pro Phe Gln Arg Cys Gln Leu Leu Arg Leu	
100 105 110 115	
ctc tgc tac tgc ccg ggc ggc cag gcc ggc ggc gca cag caa ggc ttc	615
Leu Cys Tyr Cys Pro Gly Gly Gln Ala Gly Gly Ala Gln Gln Gly Phe	
120 125 130	
ctg ctg cgc gac ccc ctg gat gac cct gac acc cgg caa gcg ctg ctc	663
Leu Leu Arg Asp Pro Leu Asp Asp Pro Asp Thr Arg Gln Ala Leu Leu	
135 140 145	
gag ctg ctg ggc gcc tgc cag gag gca cca cgc ccg cac ttg ggc gag	711
Glu Leu Leu Gly Ala Cys Gln Glu Ala Pro Arg Pro His Leu Gly Glu	
150 155 160	
ttc gag gcc gac ccg cgc ggc cag ctg tgg cag cgc ctc tgg gag gtg	759
Phe Glu Ala Asp Pro Arg Gly Gln Leu Trp Gln Arg Leu Trp Glu Val	
165 170 175	
caa gac ggc agg cgg ctg cag gtg ggc tgc gca cag gtc gtg ccc gtc	807
Gln Asp Gly Arg Arg Leu Gln Val Gly Cys Ala Gln Val Val Pro Val	
180 185 190 195	
ccg gag ccc ccg ctg cac ccg gtg gtg cca gac ttg ccc agt tcc gtg	855
Pro Glu Pro Pro Leu His Pro Val Val Pro Asp Leu Pro Ser Ser Val	
200 205 210	
gtc ttc ccg gac cgg gaa gcc gcc cgg gcc gtt ttg gag gag tgt acc	903
Val Phe Pro Asp Arg Glu Ala Ala Arg Ala Val Leu Glu Glu Cys Thr	
215 220 225	
tcc ttt att cct gaa gcc cgg gca gtg ctt gac ctg gtc gac cag tgc	951
Ser Phe Ile Pro Glu Ala Arg Ala Val Leu Asp Leu Val Asp Gln Cys	
230 235 240	

Sequence Listing

cca aaa cag atc cag aaa gga aag ttc cag gtt gtt gcc atc gaa gga	999
Pro Lys Gln Ile Gln Lys Gly Lys Phe Gln Val Val Ala Ile Glu Gly	
245 250 255	
ctg gat gcc acg ggt aaa acc acg gtg acc cag tca gtg gca gat tca	1047
Leu Asp Ala Thr Gly Lys Thr Thr Val Thr Gln Ser Val Ala Asp Ser	
260 265 270 275	
ctt aag gct gtc ctc tta aag tca cca ccc tct tgc att ggc cag tgg	1095
Leu Lys Ala Val Leu Leu Lys Ser Pro Pro Ser Cys Ile Gly Gln Trp	
280 285 290	
agg aag atc ttt gat gat gaa cca act atc att aga aga gct ttt tac	1143
Arg Lys Ile Phe Asp Asp Glu Pro Thr Ile Ile Arg Arg Ala Phe Tyr	
295 300 305	
tct ttg ggc aat tat att gtg gcc tcc gaa ata gct aaa gaa tct gcc	1191
Ser Leu Gly Asn Tyr Ile Val Ala Ser Glu Ile Ala Lys Glu Ser Ala	
310 315 320	
aaa tct cct gtg att gta gac agg tac tgg cac agc acg gcc acc tat	1239
Lys Ser Pro Val Ile Val Asp Arg Tyr Trp His Ser Thr Ala Thr Tyr	
325 330 335	
gct ata gcc act gag gtg agt ggg ggt ctc cag cac ctg ccc cca gcc	1287
Ala Ile Ala Thr Glu Val Ser Gly Gly Leu Gln His Leu Pro Pro Ala	
340 345 350 355	
cat cac cct gtg tac cag tgg cca gag gac ctg ctc aaa cct gac ctt	1335
His His Pro Val Tyr Gln Trp Pro Glu Asp Leu Leu Lys Pro Asp Leu	
360 365 370	
atc ctg ctg ctc act gtg agt cct gag gag agg ttg cag agg ctg cag	1383
Ile Leu Leu Leu Thr Val Ser Pro Glu Glu Arg Leu Gln Arg Leu Gln	
375 380 385	
ggc cgg ggc atg gag aag acc agg gaa gaa gca gaa ctt gag gcc aac	1431
Gly Arg Gly Met Glu Lys Thr Arg Glu Glu Ala Glu Leu Glu Ala Asn	
390 395 400	

Sequence Listing

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agt gtg ttt cgt caa aag gta gaa atg tcc tac cag cgg atg gag aat      1479
Ser Val Phe Arg Gln Lys Val Glu Met Ser Tyr Gln Arg Met Glu Asn
  405                410                415

cct ggc tgc cat gtg gtt gat gcc agc ccc tcc aga gaa agg gtc ctg      1527
Pro Gly Cys His Val Val Asp Ala Ser Pro Ser Arg Glu Arg Val Leu
  420                425                430                435

cag acg gta tta agc cta atc cag aat agt ttt agt gaa ccg              t      1570
Gln Thr Val Leu Ser Leu Ile Gln Asn Ser Phe Ser Glu Pro
      440                445

agttactctg gccaggtgcc acgtctaact agattagatg ttgtttgaaa catctacatc      1630

caccatttgt tatgcagtgt tcccaaattt ctgttctaca agcatgttgt gtggcagaaa      1690

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ccgtcatcac aaaggtccct ctcatcatgt tccagtgaga ggccagcgat tgctttcttc      1810

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aagacctgtc ttactcagac agcaccaggt gtacagaagc agcagacaag atcttccaga      1930

tcagcaggga gaccccgag cctctgcttc tcctacactg gcatgctgat gagatcgtga      1990

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tgcccaagga cactcctgca gagccatttt tgggtaagga acacttaca agaaggcatt      2170

gatcttgtgt ctgaggctca gagccctttt gataggcttc tgagtcatat ataaagacat      2230

tcaagccaag atgctccaac tgcaaata ccaaccttct ctgaattata ttttgcttat      2290

ttatatctt tttctttttt tctaaagtat ggctctgaat agaatgcaca ttttccattg      2350

aactggatgc atttcattta gccaatccag taatttat atattaatct atacaatatg      2410

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Sequence Listing

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tttcctcagc ataggagcta tgattcatta attaaaagtg gagtcaaaac gctaaatgca      2470
atgtttgttg tgtattttca ttacacaaac ttaatttgtc ttgttaaata agtacagtgg      2530
atcttggagt gggatttctt ggtaaattat cttgcacttg aatgtctcat gattacatat      2590
gaaatcgctt tgacatatct ttagacagaa aaaagtagct gagtgagggg gaaattatag      2650
agctgtgtga ctttagggag taggttgaac caggtgatta cctaaaattc cttccagttc      2710
aaaggcagat aaatctgtaa attattttat cctatctacc atttcttaag aagacattac      2770
tccaaaataa ttaaatttaa ggctttatca ggtctgcata tagaatctta aattctaata      2830
aagtttcatg ttaatgtcat aggattttta aaagagctat aggtaatttc tatataatat      2890
gtgtatatta aaatgtaatt gatttcagtt gaaagtattt taaagctgat aaatagcatt      2950
agggttcttt gcaatgtggt atctagctgt attattgggt ttatttactt taaacatttt      3010
gaaaagctta tactggcagc ctagaaaaac aaacaattaa tgtatcttta tgccctggc      3070
acatgaataa actttgctgt ggtttact      3098

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<210> 12

<211> 449

<212> PRT

<213> Homo sapiens

<400> 12

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Met Ala Phe Ala Arg Arg Leu Leu Arg Gly Pro Leu Ser Gly Pro Leu
  1             5             10             15

```

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Leu Gly Arg Arg Gly Val Cys Ala Gly Ala Met Ala Pro Pro Arg Arg
      20             25             30

```

```

Phe Val Leu Glu Leu Pro Asp Cys Thr Leu Ala His Phe Ala Leu Gly
    35             40             45

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Sequence Listing

Ala Asp Ala Pro Gly Asp Ala Asp Ala Pro Asp Pro Arg Leu Ala Ala
 50 55 60

Leu Leu Gly Pro Pro Glu Arg Ser Tyr Ser Leu Cys Val Pro Val Thr
 65 70 75 80

Pro Asp Ala Gly Cys Gly Ala Arg Val Arg Ala Ala Arg Leu His Gln
 85 90 95

Arg Leu Leu His Gln Leu Arg Arg Gly Pro Phe Gln Arg Cys Gln Leu
 100 105 110

Leu Arg Leu Leu Cys Tyr Cys Pro Gly Gly Gln Ala Gly Gly Ala Gln
 115 120 125

Gln Gly Phe Leu Leu Arg Asp Pro Leu Asp Asp Pro Asp Thr Arg Gln
 130 135 140

Ala Leu Leu Glu Leu Leu Gly Ala Cys Gln Glu Ala Pro Arg Pro His
 145 150 155 160

Leu Gly Glu Phe Glu Ala Asp Pro Arg Gly Gln Leu Trp Gln Arg Leu
 165 170 175

Trp Glu Val Gln Asp Gly Arg Arg Leu Gln Val Gly Cys Ala Gln Val
 180 185 190

Val Pro Val Pro Glu Pro Pro Leu His Pro Val Val Pro Asp Leu Pro
 195 200 205

Ser Ser Val Val Phe Pro Asp Arg Glu Ala Ala Arg Ala Val Leu Glu
 210 215 220

Glu Cys Thr Ser Phe Ile Pro Glu Ala Arg Ala Val Leu Asp Leu Val
 225 230 235 240

Asp Gln Cys Pro Lys Gln Ile Gln Lys Gly Lys Phe Gln Val Val Ala
 245 250 255

Sequence Listing

Ile Glu Gly Leu Asp Ala Thr Gly Lys Thr Thr Val Thr Gln Ser Val
 260 265 270

Ala Asp Ser Leu Lys Ala Val Leu Leu Lys Ser Pro Pro Ser Cys Ile
 275 280 285

Gly Gln Trp Arg Lys Ile Phe Asp Asp Glu Pro Thr Ile Ile Arg Arg
 290 295 300

Ala Phe Tyr Ser Leu Gly Asn Tyr Ile Val Ala Ser Glu Ile Ala Lys
 305 310 315 320

Glu Ser Ala Lys Ser Pro Val Ile Val Asp Arg Tyr Trp His Ser Thr
 325 330 335

Ala Thr Tyr Ala Ile Ala Thr Glu Val Ser Gly Gly Leu Gln His Leu
 340 345 350

Pro Pro Ala His His Pro Val Tyr Gln Trp Pro Glu Asp Leu Leu Lys
 355 360 365

Pro Asp Leu Ile Leu Leu Leu Thr Val Ser Pro Glu Glu Arg Leu Gln
 370 375 380

Arg Leu Gln Gly Arg Gly Met Glu Lys Thr Arg Glu Glu Ala Glu Leu
 385 390 395 400

Glu Ala Asn Ser Val Phe Arg Gln Lys Val Glu Met Ser Tyr Gln Arg
 405 410 415

Met Glu Asn Pro Gly Cys His Val Val Asp Ala Ser Pro Ser Arg Glu
 420 425 430

Arg Val Leu Gln Thr Val Leu Ser Leu Ile Gln Asn Ser Phe Ser Glu
 435 440 445

Pro

Sequence Listing

<210> 13
 <211> 1893
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (418)..(1392)
 <223> LBFL167 Clone #20

<400> 13
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 cccctggggc gaagaggccg cgtccgcctt catttgtggc cgggtgcttcg cccctgacc 120
 cttcgcccc aaagaccagc tctaactga ggcctcggc cggcctgccc cagcctcgta 180
 cagccgccca gcctcgccca gccggtgtcc ggagaccctc gggccgtgtc catttgtggg 240
 caaagccagc ggggcaggct tggccagagt gcaccactcg gcgccgtccc agggccgacg 300
 ctctggggcg gcccggaacc ccagggttcg gccccgtgtt tccgaccggc ggagggggct 360
 cagcggcccc atcccacgga agcgcgctcg gaggggtggg acccggccgg accggag 417
 atg gcg ccg cca gcg ggc ggg gcg gcg gcg gcg gcc tcg gac ttg ggc 465
 Met Ala Pro Pro Ala Gly Gly Ala Ala Ala Ala Ala Ser Asp Leu Gly
 1 5 10 15
 tcc gcc gca gtg ctc ttg gct gtg cac gcc gcg gtg agg ccg ctg ggc 513
 Ser Ala Ala Val Leu Leu Ala Val His Ala Ala Val Arg Pro Leu Gly
 20 25 30
 gcc ggg cca gac gcc gag gca cag ctg cgg agg ctg cag ctg agc gcg 561
 Ala Gly Pro Asp Ala Glu Ala Gln Leu Arg Arg Leu Gln Leu Ser Ala
 35 40 45
 gac cct gag cgg cct ggg cgc ttc cgg ctg gag ctg ctg ggc gcg gga 609
 Asp Pro Glu Arg Pro Gly Arg Phe Arg Leu Glu Leu Leu Gly Ala Gly

Sequence Listing

50	55	60	
cct ggg gcg gtt aat ttg gag tgg ccc ctg gag tca gtt tcc tac acc			657
Pro Gly Ala Val Asn Leu Glu Trp Pro Leu Glu Ser Val Ser Tyr Thr			
65	70	75	80
atc cga ggc ccc acc cag cac gag cta cag cct cca cca gga ggg cct			705
Ile Arg Gly Pro Thr Gln His Glu Leu Gln Pro Pro Pro Gly Gly Pro			
	85	90	95
gga acc ctc agc ctg cac ttc ctc aac cct cag gaa gct cag cgg tgg			753
Gly Thr Leu Ser Leu His Phe Leu Asn Pro Gln Glu Ala Gln Arg Trp			
100	105	110	
gca gtc cta gtc cga ggt gcc acc gtg gaa gga cag aat ggc agc aag			801
Ala Val Leu Val Arg Gly Ala Thr Val Glu Gly Gln Asn Gly Ser Lys			
115	120	125	
agc aac tca cca cca gcc ttg ggc cca gaa gca tgc cct gtc tcc ctg			849
Ser Asn Ser Pro Pro Ala Leu Gly Pro Glu Ala Cys Pro Val Ser Leu			
130	135	140	
ccc agt ccc ccg gaa gcc tcc aca ctc aag ggc cct cca cct gag gca			897
Pro Ser Pro Pro Glu Ala Ser Thr Leu Lys Gly Pro Pro Pro Glu Ala			
145	150	155	160
gat ctt cct agg agc cct gga aac ttg acg gag aga gaa gag ctg gca			945
Asp Leu Pro Arg Ser Pro Gly Asn Leu Thr Glu Arg Glu Glu Leu Ala			
165	170	175	
ggg agc ctg gcc cgg gct att gca ggt gga gac gag aag ggg gca gcc			993
Gly Ser Leu Ala Arg Ala Ile Ala Gly Gly Asp Glu Lys Gly Ala Ala			
180	185	190	
caa gtg gca gcc gtc ctg gcc cag cat cgt gtg gcc ctg agt gtt cag			1041
Gln Val Ala Ala Val Leu Ala Gln His Arg Val Ala Leu Ser Val Gln			
195	200	205	
ctt cag gag gcc tgc ttc cca cct ggc ccc atc agg ctg cag gtc aca			1089
Leu Gln Glu Ala Cys Phe Pro Pro Gly Pro Ile Arg Leu Gln Val Thr			

Sequence Listing

210	215	220	
ctt gaa gac gct gcc tct gcc gca tcc gcc gcg tcc tct gca cac gtt			1137
Leu Glu Asp Ala Ala Ser Ala Ala Ser Ala Ala Ser Ser Ala His Val			
225	230	235	240
gcc ctg cag gtc cac ccc cac tgc act gtt gca gct ctc cag gag cag			1185
Ala Leu Gln Val His Pro His Cys Thr Val Ala Ala Leu Gln Glu Gln			
245	250	255	
gtg ttc tca gag ctc ggt ttc ccg cca gcc gtg caa cgc tgg gtc atc			1233
Val Phe Ser Glu Leu Gly Phe Pro Pro Ala Val Gln Arg Trp Val Ile			
260	265	270	
gga cgg tgc ctg tgt gtg cct gag cgc agc ctt gcc tct tac ggg gtt			1281
Gly Arg Cys Leu Cys Val Pro Glu Arg Ser Leu Ala Ser Tyr Gly Val			
275	280	285	
cgg cag gat ggg gac cct gct ttc ctc tac ttg ctg tca gct cct cga			1329
Arg Gln Asp Gly Asp Pro Ala Phe Leu Tyr Leu Ser Ala Pro Arg			
290	295	300	
gaa gcc cca ggt cag tcc tcg atg ggg gtg ggg tgt ggg agg tgg ggt			1377
Glu Ala Pro Gly Gln Ser Ser Met Gly Val Gly Cys Gly Arg Trp Gly			
305	310	315	320
gca gcc cca cag tcc	tgagctcc	accccctcag	ccacaggacc tagccctcag
Ala Ala Pro Gln Ser			1430
325			
cacccccaga agatggacgg ggaacttgga cgcttggttc ccccatcatt ggggctaccc			1490
ccaggccccc agccagctgc ctccagcctg ccaggtccac tccagcccag ctggctctgt			1550
ccttcctgca ccttcacaa tgccccagac cgccctggct gtgagatgtg tagcaccag			1610
agggcctgca cttgggaccc cttgtctgca gcttccacct agcagccacc agaggtacca			1670
gagggtggcac aggcagggga ggtggggggc cagggcagaa tccacaggaa tgaccagct			1730

Sequence Listing

cctccccac aggttacaag gggagagtgg cccttcctc acaagtcga catctccagg 1790

ccccactga actccgggga cctctactga ctgcttgctg ggacagtcac cagggttggg 1850

gggaaggggc acaaatgaa accattaaag acccttaaga gcc 1893

<210> 14

<211> 325

<212> PRT

<213> Homo sapiens

<400> 14

Met Ala Pro Pro Ala Gly Gly Ala Ala Ala Ala Ser Asp Leu Gly

1 5 10 15

Ser Ala Ala Val Leu Leu Ala Val His Ala Ala Val Arg Pro Leu Gly

20 25 30

Ala Gly Pro Asp Ala Glu Ala Gln Leu Arg Arg Leu Gln Leu Ser Ala

35 40 45

Asp Pro Glu Arg Pro Gly Arg Phe Arg Leu Glu Leu Leu Gly Ala Gly

50 55 60

Pro Gly Ala Val Asn Leu Glu Trp Pro Leu Glu Ser Val Ser Tyr Thr

65 70 75 80

Ile Arg Gly Pro Thr Gln His Glu Leu Gln Pro Pro Pro Gly Gly Pro

85 90 95

Gly Thr Leu Ser Leu His Phe Leu Asn Pro Gln Glu Ala Gln Arg Trp

100 105 110

Ala Val Leu Val Arg Gly Ala Thr Val Glu Gly Gln Asn Gly Ser Lys

115 120 125

Ser Asn Ser Pro Pro Ala Leu Gly Pro Glu Ala Cys Pro Val Ser Leu

130 135 140

Sequence Listing

Pro Ser Pro Pro Glu Ala Ser Thr Leu Lys Gly Pro Pro Pro Glu Ala
 145 150 155 160

Asp Leu Pro Arg Ser Pro Gly Asn Leu Thr Glu Arg Glu Glu Leu Ala
 165 170 175

Gly Ser Leu Ala Arg Ala Ile Ala Gly Gly Asp Glu Lys Gly Ala Ala
 180 185 190

Gln Val Ala Ala Val Leu Ala Gln His Arg Val Ala Leu Ser Val Gln
 195 200 205

Leu Gln Glu Ala Cys Phe Pro Pro Gly Pro Ile Arg Leu Gln Val Thr
 210 215 220

Leu Glu Asp Ala Ala Ser Ala Ala Ser Ala Ala Ser Ser Ala His Val
 225 230 235 240

Ala Leu Gln Val His Pro His Cys Thr Val Ala Ala Leu Gln Glu Gln
 245 250 255

Val Phe Ser Glu Leu Gly Phe Pro Pro Ala Val Gln Arg Trp Val Ile
 260 265 270

Gly Arg Cys Leu Cys Val Pro Glu Arg Ser Leu Ala Ser Tyr Gly Val
 275 280 285

Arg Gln Asp Gly Asp Pro Ala Phe Leu Tyr Leu Leu Ser Ala Pro Arg
 290 295 300

Glu Ala Pro Gly Gln Ser Ser Met Gly Val Gly Cys Gly Arg Trp Gly
 305 310 315 320

Ala Ala Pro Gln Ser
 325

<210> 15

<211> 1597

<212> DNA

Sequence Listing

<213> Homo sapiens

<220>

<221> CDS

<222> (271)..(1431)

<223> LBFL167 Clone #46

<400> 15

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tccggagacc ctccggccgt gtccatttgt gggcaaagcc agcggggcag gcttgccag 120

agtgcaccac tcggcgccgt cccaggcccg acgctctggg cgcgcccgga accccaggtt 180

cgcggcccggt gtttcgacc ggcggagggg gctcagcggc ccgatccac ggaagcgcgc 240

tcggaggggt gggaccggc cggaccggag atg gcg ccg cca gcg ggc ggg gcg 294

Met Ala Pro Pro Ala Gly Gly Ala

1

5

gcg gcg gcg gcc tcg gac ttg ggc tcc gcc gca gtg ctc ttg gct gtg 342

Ala Ala Ala Ala Ser Asp Leu Gly Ser Ala Ala Val Leu Leu Ala Val

10

15

20

cac gcc gcg gtg agg ccg ctg ggc gcc ggg cca gac gcc gag gca cag 390

His Ala Ala Val Arg Pro Leu Gly Ala Gly Pro Asp Ala Glu Ala Gln

25

30

35

40

ctg cgg agg ctg cag ctg agc gcg gac cct gag agg cct ggg cgc ttc 438

Leu Arg Arg Leu Gln Leu Ser Ala Asp Pro Glu Arg Pro Gly Arg Phe

45

50

55

cgg ctg gag ctg ctg ggc gcg gga cct ggg gcg gtt aat ttg gag tgg 486

Arg Leu Glu Leu Leu Gly Ala Gly Pro Gly Ala Val Asn Leu Glu Trp

60

65

70

ccc ctg gag tca gtt tcc tac acc atc cga ggc ccc acc cag cac gag 534

Pro Leu Glu Ser Val Ser Tyr Thr Ile Arg Gly Pro Thr Gln His Glu

75

80

85

Sequence Listing

cta cag cct cca cca gga ggg cct gga acc ctc agc ctg cac ttc ctc	582
Leu Gln Pro Pro Pro Gly Gly Pro Gly Thr Leu Ser Leu His Phe Leu	
90 95 100	
aac cct cag gaa gct cag cgg tgg gca gtc cta gtc cga ggt gcc acc	630
Asn Pro Gln Glu Ala Gln Arg Trp Ala Val Leu Val Arg Gly Ala Thr	
105 110 115 120	
gtg gaa gga cag aat ggc agc aag agc aac tca cca cca gcc ttg ggc	678
Val Glu Gly Gln Asn Gly Ser Lys Ser Asn Ser Pro Pro Ala Leu Gly	
125 130 135	
cca gaa gca tgc cct gtc tcc ctg ccc agt ccc ccg gaa gcc tcc aca	726
Pro Glu Ala Cys Pro Val Ser Leu Pro Ser Pro Pro Glu Ala Ser Thr	
140 145 150	
ctc aag ggc cct cca cct gag gca gat ctt cct agg agc cct gga aac	774
Leu Lys Gly Pro Pro Pro Glu Ala Asp Leu Pro Arg Ser Pro Gly Asn	
155 160 165	
ttg acg gag aga gaa gag ctg gca ggg agc ctg gcc cgg gct att gca	822
Leu Thr Glu Arg Glu Glu Leu Ala Gly Ser Leu Ala Arg Ala Ile Ala	
170 175 180	
ggc gga gac gag aag ggg gca gcc caa gtg gca gcc gtc ctg gcc cag	870
Gly Gly Asp Glu Lys Gly Ala Ala Gln Val Ala Ala Val Leu Ala Gln	
185 190 195 200	
cat cgt gtg gcc ctg agt gtt cag ctt cag gag gcc tgc ttc cca cct	918
His Arg Val Ala Leu Ser Val Gln Leu Gln Glu Ala Cys Phe Pro Pro	
205 210 215	
ggc ccc atc agg ctg cag gtc aca ctt gaa gac gct gcc tct gcc gca	966
Gly Pro Ile Arg Leu Gln Val Thr Leu Glu Asp Ala Ala Ser Ala Ala	
220 225 230	
tcc gcc gcg tcc tct gca cac gtt gcc ctg cag gtc cac ccc cac tgc	1014
Ser Ala Ala Ser Ser Ala His Val Ala Leu Gln Val His Pro His Cys	
235 240 245	

Sequence Listing

act gtt gca gct ctc cag gag cag gtg ttc tca gag ctc ggt ttc ccg Thr Val Ala Ala Leu Gln Glu Gln Val Phe Ser Glu Leu Gly Phe Pro 250 255 260	1062
cca gcc gtg caa cgc tgg gtc atc gga cgg tgc ctg tgt gtg cct gag Pro Ala Val Gln Arg Trp Val Ile Gly Arg Cys Leu Cys Val Pro Glu 265 270 275 280	1110
cgc agc ctt gcc tct tac ggg gtt cgg cag gat ggg gac cct gct ttc Arg Ser Leu Ala Ser Tyr Gly Val Arg Gln Asp Gly Asp Pro Ala Phe 285 290 295	1158
ctc tac ttg ctg tca gct cct cga gaa gcc cca gcc aca gga cct agc Leu Tyr Leu Leu Ser Ala Pro Arg Glu Ala Pro Ala Thr Gly Pro Ser 300 305 310	1206
cct cag cac ccc cag aag atg gac ggg gaa ctt gga cgc ttg ttt ccc Pro Gln His Pro Gln Lys Met Asp Gly Glu Leu Gly Arg Leu Phe Pro 315 320 325	1254
cca tca ttg ggg cta ccc cca ggc ccc cag cca gct gcc tcc agc ctg Pro Ser Leu Gly Leu Pro Pro Gly Pro Gln Pro Ala Ala Ser Ser Leu 330 335 340	1302
ccc agt cca ctc cag ccc agc tgg tcc tgt cct tcc tgc acc ttc atc Pro Ser Pro Leu Gln Pro Ser Trp Ser Cys Pro Ser Cys Thr Phe Ile 345 350 355 360	1350
aat gcc cca gac cgc cct ggc tgt gag atg tgt agc acc cag agg ccc Asn Ala Pro Asp Arg Pro Gly Cys Glu Met Cys Ser Thr Gln Arg Pro 365 370 375	1398
tgc act tgg gac ccc ctt gct gca gct tcc acc tagcagcca ccagaggtaa Cys Thr Trp Asp Pro Leu Ala Ala Ala Ser Thr 380 385	1450
caaggggaga gtggcccttc cctcacaagt ccgacatctc caggcccca ctgaactccg	1510
gggacctcta ctgactgctt gctgggacag tcaccagggt tggggggaag ggccacaaaa	1570

Sequence Listing

tgaaaccatt aaagaccctt aagagcc

1597

<210> 16

<211> 387

<212> PRT

<213> Homo sapiens

<400> 16

Met Ala Pro Pro Ala Gly Gly Ala Ala Ala Ala Ser Asp Leu Gly
1 5 10 15

Ser Ala Ala Val Leu Leu Ala Val His Ala Ala Val Arg Pro Leu Gly
20 25 30

Ala Gly Pro Asp Ala Glu Ala Gln Leu Arg Arg Leu Gln Leu Ser Ala
35 40 45

Asp Pro Glu Arg Pro Gly Arg Phe Arg Leu Glu Leu Leu Gly Ala Gly
50 55 60

Pro Gly Ala Val Asn Leu Glu Trp Pro Leu Glu Ser Val Ser Tyr Thr
65 70 75 80

Ile Arg Gly Pro Thr Gln His Glu Leu Gln Pro Pro Pro Gly Gly Pro
85 90 95

Gly Thr Leu Ser Leu His Phe Leu Asn Pro Gln Glu Ala Gln Arg Trp
100 105 110

Ala Val Leu Val Arg Gly Ala Thr Val Glu Gly Gln Asn Gly Ser Lys
115 120 125

Ser Asn Ser Pro Pro Ala Leu Gly Pro Glu Ala Cys Pro Val Ser Leu
130 135 140

Pro Ser Pro Pro Glu Ala Ser Thr Leu Lys Gly Pro Pro Pro Glu Ala
145 150 155 160

Sequence Listing

Asp Leu Pro Arg Ser Pro Gly Asn Leu Thr Glu Arg Glu Glu Leu Ala
 165 170 175

Gly Ser Leu Ala Arg Ala Ile Ala Gly Gly Asp Glu Lys Gly Ala Ala
 180 185 190

Gln Val Ala Ala Val Leu Ala Gln His Arg Val Ala Leu Ser Val Gln
 195 200 205

Leu Gln Glu Ala Cys Phe Pro Pro Gly Pro Ile Arg Leu Gln Val Thr
 210 215 220

Leu Glu Asp Ala Ala Ser Ala Ala Ser Ala Ala Ser Ser Ala His Val
 225 230 235 240

Ala Leu Gln Val His Pro His Cys Thr Val Ala Ala Leu Gln Glu Gln
 245 250 255

Val Phe Ser Glu Leu Gly Phe Pro Pro Ala Val Gln Arg Trp Val Ile
 260 265 270

Gly Arg Cys Leu Cys Val Pro Glu Arg Ser Leu Ala Ser Tyr Gly Val
 275 280 285

Arg Gln Asp Gly Asp Pro Ala Phe Leu Tyr Leu Leu Ser Ala Pro Arg
 290 295 300

Glu Ala Pro Ala Thr Gly Pro Ser Pro Gln His Pro Gln Lys Met Asp
 305 310 315 320

Gly Glu Leu Gly Arg Leu Phe Pro Pro Ser Leu Gly Leu Pro Pro Gly
 325 330 335

Pro Gln Pro Ala Ala Ser Ser Leu Pro Ser Pro Leu Gln Pro Ser Trp
 340 345 350

Ser Cys Pro Ser Cys Thr Phe Ile Asn Ala Pro Asp Arg Pro Gly Cys
 355 360 365

Glu Met Cys Ser Thr Gln Arg Pro Cys Thr Trp Asp Pro Leu Ala Ala

Sequence Listing

370

375

380

Ala Ser Thr

385

<210> 17

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 17

gctgaagcag gaaaatcgct t

21

<210> 18

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 18

tgagacggag tctcactcgg t

21

<210> 19

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

Sequence Listing

<400> 19

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24

<210> 20

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 20

cgcccaagct tttcctttt

19

<210> 21

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 21

caccctttgc ctctgtcact tccgca

26

<210> 22

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

Sequence Listing

<400> 22

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23

<210> 23

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 23

ggagctgagc agcagtgtaa tgaa

24

<210> 24

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 24

gaggcctgcc tgaaggagga gcttc

25

<210> 25

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 25

Sequence Listing

tctggaagta gtgcagacgc ctcagg

26

<210> 26

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 26

agccaacgtc ggctttgtta tccagc

26

<210> 27

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 27

gctgtcagat atgatgggtc tggac

25

<210> 28

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 28

ccagcctcac cactgttggg ttgc

24

Sequence Listing

<210> 29
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 29
cattctctga gctgtattag tgt

23

<210> 30
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 30
cctgagctgg aatgacctgc a

21

<210> 31
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 31
ctttgtgttg gctgcagcca ca

22

Sequence Listing

<210> 32
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 32
tgaggagaga ctttgctgac tggt 24

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 33
gtcctgtctg gcggtgccga 20

<210> 34
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 34
gctccaggat cccctgtcac ctgggccttc tgccttttgg ct 42

Sequence Listing

<210> 35
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 35
ccatatggag aggagagcag cgggccca

28

<210> 36
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 36
gaaggaggaa catggagagg aga

23

<210> 37
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 37
ccatatgccc cgggtagtct actgcat

27

<210> 38

Sequence Listing

<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 38
gtcgactcga gtcacttcg caaaaacttc ttg

33

<210> 39
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 39
tccattccga aggctctcct cc

22

<210> 40
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 40
gtctgtgtga cggaatgta agc

23

<210> 41
<211> 23

Sequence Listing

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 41

gaaggtcgaa ggcagaccga tgt

23

<210> 42

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 42

gaatgtgtca gagacaagtg cagc

24

<210> 43

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 43

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